

S.446

CTP

THE ANALYST;
A
QUARTERLY JOURNAL,
OF
SCIENCE, LITERATURE,
NATURAL HISTORY, AND THE FINE ARTS.

No. XIII.



OCTOBER, 1835.

London:
SIMPKIN, MARSHALL, AND CO.,
STATIONERS' HALL, COURT;
W. CURRY, JUN., & CO., DUBLIN;

BARLOW, KNOTT, WRIGHTSON AND WEBB, LANGBRIDGE, DRAKE, BIRMINGHAM; GRAPEL, LIVERPOOL; BANCKS AND CO., MANCHESTER; WHEELER, DEIGHTON, STRATFORD, RIDGE, HUNT, WOODFORD, EATON, WORCESTER; JEW AND BRYANT, GLOUCESTER; WILLIAMS, H. DAVIS, BETTISON, CHELTENHAM; EDDOWES, SHREWSBURY; SHARPE, WARWICK; W. PARKE, WOLVERHAMPTON; AND ALL BOOKSELLERS IN TOWN AND COUNTRY.

PRICE FOUR SHILLINGS.



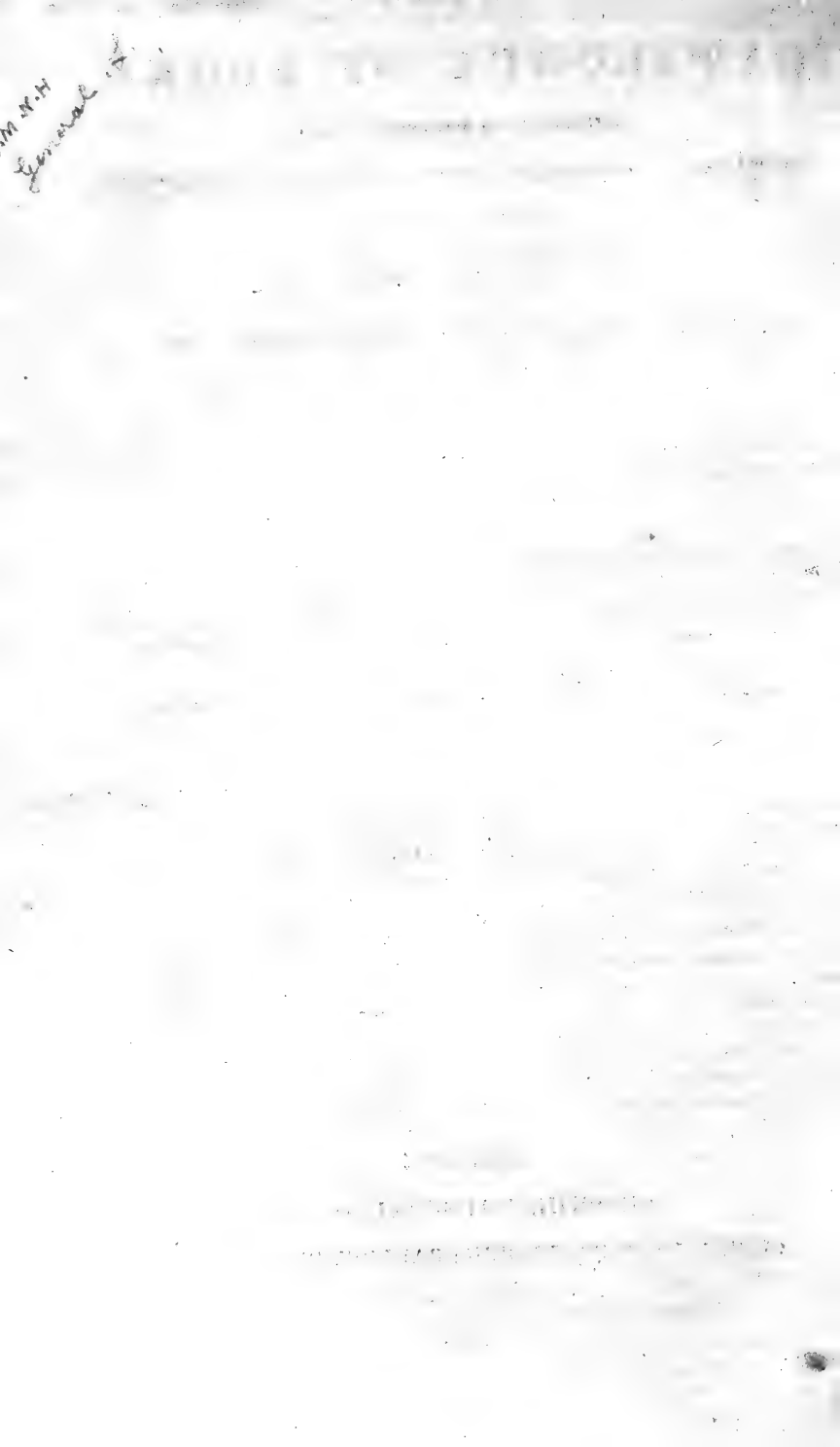
THE ANALYST;
A
QUARTERLY JOURNAL,
OF
SCIENCE, LITERATURE,
NATURAL HISTORY, AND THE FINE ARTS.

VOL. III.



London :
SIMPKIN, MARSHALL, & CO.
CURRY, JUN. & CO., DUBLIN ; BARLOW, BIRMINGHAM.

1836.



M.H.
General

EDUCATION.

THE attention of the Nobility and Gentry is directed to an Establishment under the superintendence of a Gentleman, who has distinguished himself in the Literary world, conducted on a system, and comprising a course of education suited to Youths destined to fill the higher departments of life—the Church, the Law, the Army and Navy, and Mercantile Offices.

A public announcement precludes enlargement on this system, yet the following exposition may not be altogether useless :—

The importance of Classical Learning requires no enforcement—it must ever form the basis of a liberal education. But it is universally admitted, that a shorter period than is usually consumed might suffice for its attainment. It may therefore be necessary cursorily to observe, that the best treatises, both English and Foreign, on the most effectual mode of teaching the classics have been consulted, with a view of forming a system by which a competent knowledge of Greek and Latin may be acquired in the shortest possible time. The success which has attended the labours of the Principal and his Assistants in this department, and of which very satisfactory evidence can be adduced, will give attestation to the excellency of the Classical instruction afforded in this Establishment.

But not inferior to the Classics, and by some of the most able writers on Instruction deemed of greater moment in an education available to general purposes, is a comprehensive and practical knowledge of Modern Languages. At a period when the intercourse between the nations of Europe has augmented to an astonishing degree, and when the extraordinary improvements in Mechanics promise to render still more rapid the communications between distant countries, and consequently to increase Commerce, the love of Travel, and the knowledge of Foreign Literature and Science, a competent acquaintance with more than one continental language is indispensable to persons aspiring to a liberal education. Besides the instruction given in the French and Italian languages, a more than usual attention is paid to the cultivation of the German, which contains works of the rarest merit in every department of Science and Literature. In historical and philological works, of every description, the Germans have excelled all other nations, and the labours of a Niebuhr, Wachsmuth, and Heeren, in Classic investigations, and of a Klaproth, Van Hammer, and Schlegel in Oriental Literature, (not to dwell on the distinguished merits of a Klopstock, Lessing, Winkelmann, Wieland, Burger, Goethe, Johannes Muller, Herder, and Schiller,) have given a new impetus to these pursuits at our Universities, and thus rendered absolutely requisite a knowledge of the German to the successful study, not merely of the Greek and Roman writers, but of every other branch of human learning. The Principal of this Establishment having taken a degree at a German University, and travelled much, is enabled to give and superintend instruction in these departments of education, with no inconsiderable advantage to his Pupils.

To an extensive study of ancient and modern languages, that of History, Chronology, and Geography is added. The dry and uninteresting mode in which these subjects are

usually taught is avoided, by imparting the knowledge of them through the medium of lectures, by which the attention of the Pupil is kept alive, and the Lecturer is enabled to elucidate his subject more amply by dwelling on kindred branches of knowledge. Although controversial history is no less to be avoided than controversial religion, yet as in no well regulated school the Pupil is left without instruction in the duties and principles of the Christian religion, so the Principal of this Establishment conceives it his duty not to leave the youths entrusted to his care subject to become in after life a prey to every wind of political doctrine, but so to expound in his historical lectures the nature and principles of government and the duties and rights of subjects, that they may be fortified against the reception of those extravagant and erroneous notions of ancient liberty, which, by easy transitions, lead to the Jacobinical Republicanism of modern times.

Desirous to render his system such as to facilitate to his Pupils the attainment of academical honours or professional distinction, the higher branches of Mathematics are taught by an eminent Master on the plan pursued in the French schools, which has been found highly conducive to rapidity of acquirement; and Weekly Lectures are given on Natural Philosophy and Chemistry.

But as, in order to produce all the benefit and happiness to mankind of which they are susceptible, Science and Literature should be united to religion, and all our knowledge should be made subservient to the glory of that Being in whom we live and move, the most anxious care is employed by the Principal to enforce, both by example and precept, the obligations of morality and religion. Without pretending to be a Seminary of Theology, it may be affirmed with truth, that few institutions will be found to afford sounder instruction

in religion than this. Regular lectures on the evidences of Christianity are delivered to those of riper age, whilst to all are expounded the Scriptures and the Catechism ; so that every Pupil will have an opportunity of acquiring that comprehensive view of the Christian Scheme, which, with the blessing of God, will preserve him from the poison of infidelity, and keep him when he is old in the path in which he should walk.

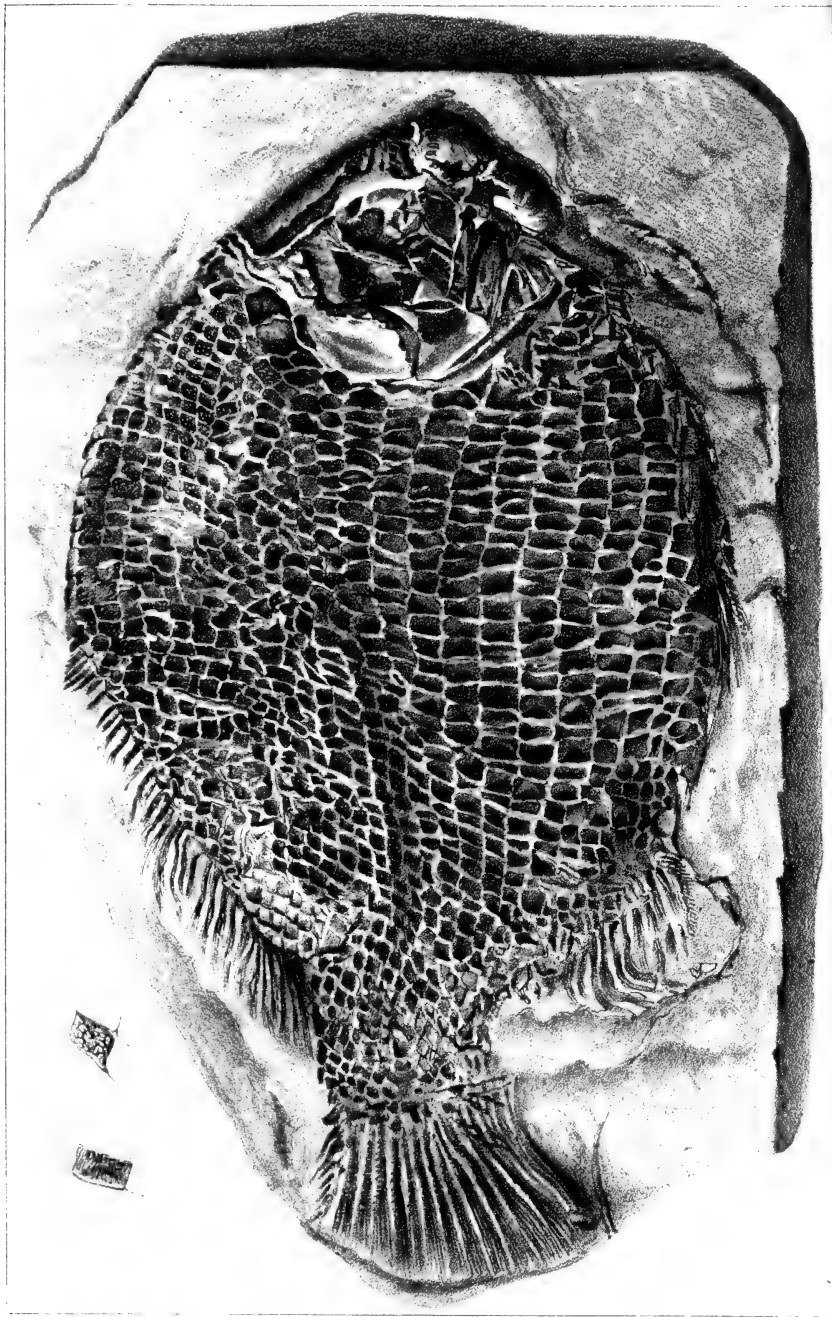
Regulations have been adopted to stimulate the Pupils to the acquisition of knowledge and the observance of discipline, by which corporal and humiliating punishments are rendered wholly unnecessary, and which, appealing to the moral sentiments alone, are calculated to call them into beneficial action.

The domestic arrangements are superintended by the lady of the Principal and a Matron. Of the House, which is situated in one of the midland counties, it will be sufficient to say, that it has very lately been erected with a view to a school, and comprises, as to locality and internal arrangements, whatever is calculated to afford comfort and pleasure.

Terms, 100 Guineas per annum. No extra charges, except for Printed Books and the usual accomplishments of Drawing, Dancing, and Fencing.

References, to Dignitaries of the Church, Noblemen, and Members of Parliament.—For Cards of Address, apply to G. KNOX, Esq. 13, Henrietta-Street, Cavendish-Square.





FOSSIL FISH, (a new species of the genus *Tetragono (lepis)*)

THE ANALYST.

REMARKS UPON BISHOP BURNETT'S HISTORY OF HIS OWN TIME.

LORD Dartmouth, in his Notes upon the best known and most popular of Bishop Burnett's works, the History of his own Time, has made this unqualified declaration,—a declaration in accordance with the rest of the calumnies against our author, whether avowed or anonymous: "I wrote" says his Lordship, "in the first volume of this book, that I did not believe the Bishop designedly published anything he believed to be false; therefore, think myself obliged to write in this, that I am fully satisfied that he published many things that he knew to be so:" and at the close of the work, where Burnett "prays God that his History may be read with the same candour and sincerity which he had written it," his malignant censor adds, "thus piously ends the most partial, malicious heap of scandal and misrepresentation that was ever collected for the laudable design of giving a false impression of persons and things to all future ages." However, a more liberal and enlightened commentator has justly refuted this sweeping accusation. "His History," observes Dr. Routh, "is one which will never lose its importance, but will continue to furnish materials for other historians, and to be read by those who wish to derive their knowledge of facts from the first sources of information. The accuracy of his narration has often been attacked with vehemence, and often, it must be confessed, with success; but not so often as to overthrow the general credit of his work. On the contrary, it has, in many instances,

been defended ; and time has already evinced the truth of certain records which rested on his single authority.”*

Now it will be readily admitted by all, that he who voluntarily takes upon himself to record the transactions of his own time for the instruction of posterity, engages in an office, not only of grave responsibility, but, perhaps, as thankless as can possibly be imagined : for, however severely he may be trained in the school of discretion, he will be sure to give offence to those of his contemporaries who, according to certain rooted and pre-conceived opinions, think that their own good actions cannot be too highly magnified, or their own faults too lightly censured. Unquestionably, no man is called upon to transmit to future ages the virtues or vices of his contemporaries. But if, for the benefit of his country, he will impose upon himself this task, he must know no middle line between right and wrong—he must shun all casuistry—he must show himself immeasurably superior to those who, actuated by a morbid love of popularity, make it their chief aim and intent to place the actions of their contemporaries in a flattering point of view ; and whose pens, therefore, are ever silent when an honest declaration of opinion, and a fearless testimony to important but disagreeable truths may be required. Equal freedom and justice, then, must be used in speaking of the living as well as of the dead, if any one writer wish to render his work subservient to a great moral purpose, and to be known in after ages as the steady friend of human improvement and the true lover of his country. Nothing, therefore, can be more just than the remark, that impartiality is the most difficult of all virtues. To keep our faculties unbiassed, and not to suffer them to embrace one side or other of a question, appears so impracticable, that few writers have acquired sufficient strength of mind to display this rare independence. It is, indeed, as uncommon to find two cases in which the combination of circum-

* Preface, p. 1., Oxford Edit. of Burnett's History of his own Time.—It reflects great credit upon the wisdom and liberality of an University so often and loudly reproached for its high principles of toryism in church and state, that the work of a whig Bishop should have issued, a century after his death, from the Clarendon Press. This surely must be regarded, by moderate men of all parties, as an unequivocal sign of the commencement of truer and juster notions respecting the author and his book ; and should teach carping critics to set a higher value upon the excellences of both.

stances is exactly similar, as it is for men not to fall into opposite extremes in speaking of the same persons and the same actions.—And it is also a failing no less common to every class of political reasoners, when they engage in the discussion of practical subjects of great interest, to deliver their opinions with an earnestness and passion which, to him who takes only an ordinary concern in such discussions, must pass for heat and personality. I would not, of course, be understood to apply these observations to the justification of any history deformed by violence and exaggeration. But when particular objects and particular occurrences come to be viewed through the magnifying glasses of party, it is matter even of vulgar remark, that it is difficult to distinguish between favouring and lying.

Had Burnett, then, in the *History of his own Time*, acknowledged no influence but what the strictest impartiality could avow,—had he always sought to disentangle truth from error, instead of permitting himself, according to the uncharitable criticisms of his opponents, to write upon the faith of popular rumour and prejudice, from the very peculiar circumstances of the times in which he lived and wrote, not to be occasionally mistaken would have been difficult, not to have offended, impossible; since he had events to record in which many a leading character was a problem.

It will, indeed, ever be remembered, by those who do not studiously seek to disparage the justness of our Author's conclusions, that his narrative treats of those periods of our country in which the human mind was deeply and roughly stirred—in which all the combustible elements of character were in full play and development. Plots, conspiracies, hair-breadth escapes, the purse, the axe, and the dagger, held sway in high places. There was a mighty fermentation throughout the political world. All was enterprise, boldness, and activity. The more attractive prizes in the lottery of life were beginning to be brought within the reach of a larger portion of the community. Accordingly we find that the questions which then pervaded and agitated the breasts of the many, were liberty of conscience, the limits of obedience, the rights of resistance, and the corruption of the Romish Church. In this state of things, when the discordant parts of society had not yet amalga-

mated, but existing in a somewhat chaotic disorder, produced those various jarrings which nourish the fiercest and most unbridled passions—when the national mind seemed to have obtained only a glimpse of the glorious race which, by means of a free press, it was destined hereafter to run—and when the affairs of courts, the intrigues of cabinets, and the influence of secret negociations in the relative situation of kingdoms, were considered as mysteries, not always to be unfolded even to those who lived in intimacy with the conductors of such operations; it were the height of malice and slander to impute to a premeditated perversion of truth, the errors of him who told the story of such a period. When, indeed, we think of the large field Burnett has traversed, and of the difficulties with which he had to contend, we must allow that these circumstances, if all candour had not been banished from his adversaries, should have put to silence their misrepresentations of his honest and enlightened labours, and have changed their railings against his occasional mistakes and wrong conclusions, into a conviction of the general fairness of his statements, and of his accuracy, and the extent of his information.

In treating of a period such as I have just described, it cannot fail to occur to every reflecting reader, as a natural and obvious consideration, that with Burnett's temperament, his passions were sure to be warmly actuated, and his prejudices to be strongly interested in the events he had to relate. These feelings, therefore, must be duly weighed. We must take the chaff with the wheat, we must suffer the tares to grow up with the rich grain, until the harvest of time shall have enabled us to separate them. From the following sentence it is evident that our historian judged himself as severely as his neighbours; and, therefore, if the mistakes of conduct into which his impetuosity of temper betrayed him cannot be defended by this explanation, the manliness and sincerity with which he avows them ought to render him, in other respects, worthy of public confidence. "I find," says he, "that the long experience I have had of the baseness, the malice, and the falsehood of mankind, has inclined me to be apt to think generally the worst both of men and parties: and, indeed, the peevishness, the ill-nature, and the ambition of many clergymen, has sharpened my spi-

rits too much against them : so I warn my reader to take all I say, on these heads, with some grains of allowance, though I have watched over myself and my pen so carefully, that I hope there is no great occasion for this apology."

When a writer frequently repeats this sentiment "that a lie in history is a much greater sin than a lie in common discourse," there is a strong presumption that he will feel more powerfully urged to the observance of this moral distinction than if he had never professed to recognize it. Under the influence of this persuasion, we may expect to find in Burnett many inconsistencies less real than apparent. The first question, in short, which a conscientious man, in such cases, will ask himself, is, whether a writer, of common honesty, would so far degrade himself as intentionally to misrepresent truths to serve his party, or, for its sake, vituperate characters with a venom only to be surpassed by his ignorance?—and if he is satisfied that he would not, he will consider it no false or stupid reasoning, that most of the seeming inconsistencies which occur in the *History of his own Time*, may be fairly accounted for by the different aspects which the same object presented to the author at different periods: and that he, whose character was one intense glow, in the ardour of composition might have related certain stories and sayings, received from a second or third hand, which, on that account alone, a more cautious and regulated mind would have discarded. But as it is not to be supposed that the same man sees all that is done, or hears all that is said, during his own lifetime, it follows, as a necessary consequence, that the evidence of others, even reported through two or three informants, must frequently be the basis upon which he has to rest some of his positive conclusions ;—while it is equally obvious that when the original story is not wholly true, it must still suffer more and more by successive transmissions. And thus may our historian, even when borrowing his account from eye-witnesses or contemporary narrators, or grounding his belief upon the general notoriety of facts, have identified himself completely with their prejudices and passions, though endowed with a moral sense as keen and apprehensive as any of his readers. When Burnett, therefore, is accused so violently, by Bevil Higgons, of swallowing the grossest and most im-

probable stories, and of making malleable to his wish the most stubborn facts, and of uttering those untruths which he would have shrunk from publishing in his life-time, it must strike every unbiased person, that his accuser was bound, in strict justice, to shew—where public opinion could not be adduced on the evidence of public opinion—where that which is referable to oral testimony could not be supported by oral testimony—and, in like manner, historical proof by historical proofs. Fondly credulous, as the Bishop is stated by the foregoing writer, to have been, it should be remembered, to the eternal honour of his heart and head, that he was incredulous upon a subject, where almost all were believers. He was among the first, strongly anti-papistical as he confessedly was, to offend the principles, and to shock the prejudices of the public, by avowing his disbelief of the existence of the Popish Plot. At this distracting period of our domestic history, when the high and the low were infected with one common panic and one common delusion, he nobly, but vainly, attempted to save one of its victims: and in the very height of this epidemical phrenzy, when it was even dangerous to express, either to Whig or Tory, any doubts of the reality of this conspiracy, he had the courage to tell the House of Commons, that it was unlawful to inflict punishment upon the Roman Catholics on account of conscientious dissent. In reference, again, to the accusation made by Higgons, and his other opponents, that he gives a most welcome reception to so many hearsay stories, built on a wondrous slender foundation, and does not balance and compare contrary statements and sentiments, I run little risk of contradiction in affirming that, to his ardent temperament, strong feelings, and lively fancy, and, more especially, to the extreme rapidity with which he committed his thoughts to paper, may be chiefly ascribed his hasty and not altogether consistent opinions.—Such, I venture to pronounce, will be the uniform judgment of those, who are not disposed to impeach our author's candour and good faith because he cannot always follow the right track through the variety of his details and expositions.

As to the charge made by Higgons against the Bishop, that he was afraid to publish his History in his life-time; this explanation can alone be given. Kings, statesmen, warriors, courtiers, lawyers,

divines, and poets were alternately the subject of his invectives.—These, whenever they abandoned their public duties, he lashed without measure or mercy. To have fulminated against these great monopolizers of fame and fortune was quite sufficient for the public good, without further courting their indignation, by exposing his person as well as reputation to their assaults; since some of them, experience had taught him to believe, might not be content to confine those assaults to the pen, but be eager to extend them to another mode of revenge,—the motive justifying the means. I am not here disposed to deny, that some considerations of delicacy towards the feelings of his more immediate contemporaries might have had their share in influencing him to forbid the presentation of his History to the public eye within ten years after his decease. The principal reason, however, which led him to make it a posthumous publication, was, unquestionably, the well-founded conviction that it was the recklessness of romantic and quixotic rashness, almost approaching to insanity, to brave the obloquy to which he knew that he should be exposed, for having stood forward as the bold and uncompromising censor of the faults and vices of public men—for endeavouring, as far as possible,

“That no rich or noble knave
Should walk the earth in credit to his grave.”

With respect to the oversights and mistakes, which occur in some of the dates in this History, and the inference from them, that the facts, therefore, are not to be depended upon; several examples may be found to justify the assertion, that it was not then the fashion to be remarkable for exactness in point of time, and that many violent anachronisms abound among memoir-writers, both French and English, against whom, as relators of events, no suspicion could be entertained as to their accuracy or fidelity. Indeed, it would have been considered, by the generality of readers, as a greater piece of injustice to accuse Burnett of falsifying facts, from the want of chronological precision, than, in our days, to call Abbé Raynal's celebrated work on the Indies a novel founded on fact, because, after the example of antiquity he has omitted his authorities. To the foregoing circumstances may be attributed, I think, our author's failure in rigid adherence to dates; or else to the com-

mendable attempt, in disregard of the lapse of time, to exhibit his views in nearer and more admirable perspective, and to form them into groups at once pleasing and important. But the judgment can often recommend a perfection, to which the hand can seldom attain. And Burnett, in seeking to combine causes and consequences in one regular order of succession, has not always so accomplished his task, as to detach them entirely from the rubbish of littleness and insignificance. His fulness and circumstantiality are sometimes painfully tiresome, from his making subordinate particulars the constituent parts of his history. The severe critic would, perhaps, reduce to a single book, what is dilated into two by the excursive-ness of the Bishop's pencil.

But if we are to listen to his calumniators, his literary sins, however great, must not be named in the same page with his moral delinquencies. We are told by the bitterest of them all, Higgons, that nothing can equal his insincerity, but his malice,—that in his description of persons, “he has so outraged virtue and innocence, as to forfeit that respect which is due to his character, and even to extinguish that tenderness which, in good-nature and charity, we owe to others;” in short, if we are to confide in his representations, we are to regard Burnett as possessing a heart vitiated, corrupted, gangrened to the very core. The portraits drawn by party prejudice, no doubt, are often like objects seen at a great distance, or at twilight; being neither in shape, size, nor colour, such as they really exist. Of all this, no man was more thoroughly aware than the Historian of his own Time. Yet it cannot be denied that, in delineating the character of some of those who have passed before him on the stage of public life, he has painted as much under the influence of this feeling as from actual observation. I would adduce the names of Archbishop Sancroft, Sir William Temple, Sir Cloudesley Shovel, and Sir George Rook. There is a dash of the abusive, in particular against the two last, that, if I might say so, appears blended with almost personal spite against them: while he has endowed, at the same time, a few characters with every species of moral and intellectual excellence, as if he had been writing epitaphs instead of history.

It must likewise be confessed, that he has sometimes, “bared the

mean heart which lurks beneath the star," in such a manner as to leave it doubtful whether public good or private pique had the chief share in the exposure. Through the whole of his life Burnett was a keen partizan, or, as he has been designated, a christian whig. On party topics, therefore, he had an utter contempt for neutrality and indecision. Where are those delicate and dignified antipathies, which would lead him to think it ignoble to repeat his blow if he missed his aim? His object was to strike hard and in the right place; no matter how clumsy the stroke, provided it brought down his antagonist. Nevertheless, where his vituperations are fiercest, he, somehow contrives to make it appear that they spring from the movements of a generous and indignant spirit; and that he is employed in what he thinks a work of just and manly castigation.—Many, indeed, are the passages in this memorable book, which indicate a strong belief that a new era of historical liberality was commencing, which might dare to seize the truth under whatever form, and bring it forward to the view. In speaking, therefore, of that great Revolution which threw off a line of kings for their tyranny, and adopted a new line for their religion, he has not hesitated to display, in their true colours, the conduct, feelings, and views of that party who, in secretly abetting the house of Stuart, sought to revive at the same time, those antiquated and hateful maxims, which taught monarchs to forget that the prosperity and liberty of their subjects were the surest basis of their own greatness. While, then, it is quite apparent to which side Burnett's political feelings carried him, it never with any truth or justice can be said, that he evinces the sad prostitution of mind implied in the condition of a *devoted party-man*; which leads such a puppet to refer to mean and interested motives the conduct of every opponent. On the contrary, a sense of truth and justice has often forced him to condemn his political friends, and to approve the proceedings of their adversaries; besides which, of every opinion pronounced by our author, he fairly states the grounds, and the reader is thus enabled to judge whether prejudice or sound reasoning were most conspicuous in his preferences and disgusts, his resentments and his friendships. The delineation of the character of King William may be evidenced in verification of these remarks.

Notwithstanding, however, the accusations brought against Burnett of his wish to vilify and blacken the character of his royal benefactor, we still feel a love of truth predominant in him which must ever entitle him to public confidence. He may have fallen into some incongruities,—some absurdities,—and some ridiculous stories in describing the politics, the hopes, the fears, the quarrels, and the errors, of the court and country party : but there is in every thing he says, both of friend and foe, a certain fearlessness and open-heartedness of manner, which cannot fail of powerfully impressing this on the reader's mind, that he is listening to the story of an honest as well as able man ;—though one by no means exempt from the common delusions of self-love and self-deceit, and though, also, occasionally seduced, by his political bias, into expressions concerning the personage and actions he is tracing, from which it would have been more laudable to abstain ; the same bias having induced him to give undue weight to some circumstances and to overlook others, as they agree well or ill with his system. “ Sometimes,” says Noble, “ he disguised real excellences only because they were opposite in sentiments to the mode he had adopted.”

Nor can we deny that there is an act of truth and candour in his descriptions of the adverse political leaders, which inclines us strongly to believe, that not only is he correct in the more prominent lineaments, but that he has contemplated them with that discriminating and divining eye, which had looked, as it were, into their most hidden thoughts. So graphic are his portraits that two or three lines are sufficient to mark the whole man. They, indeed, who do not take their idea of Burnett from the abuse of professed enemies, will give their cordial assent to the assertion, that his general opinions are sound, intelligent, and enlightened ; and that several of his remarks not only discover a manly strength of intellect, but a habit of assigning grounds for the conclusions which he formed not usual when he lived and wrote ; and evidently shew, that he was capable of appreciating, in a considerable degree, the influence which the great events of his age must exercise upon future generations. Giving him, however, this high praise, that he occasionally fell into a train of thinking, which proved his anticipation of the sentiments of a more experienced and impartial pos-

terity, it must, at the same time, be admitted that he was by no means exempt from an imperfection common to those who write the history of their own times—I mean that he was too much occupied with the designs of the statesmen and courtiers, to whom he was politically attached, to attend sufficiently to the immediate influence of those designs upon the national mind, and the tendency to advance or retard it. Nevertheless, from the habit he had acquired of analyzing, with the most piercing sagacity, the characters of those remarkable persons with whom he had come in contact in the course of his long career, and of studying their strongest and profoundest passions, under the conviction that a knowledge of these would develop that which is so difficult to comprehend,—the machinery of a court; and from being influenced by no squeamish feelings, in boldly and unsparingly testifying against the faults and corruptions of public men; certain it is, that, from these combined circumstances, he was often enabled to place an obscure and complicated subject in a correct and distinct point of view.

He acknowledges, however, with the greatest frankness, his narrative of English affairs to be imperfect and out of order; but, at the same time, trusting to the lights he had to guide him, challenges for his statements the fullest belief, though given on the mere strength of bare assertion. For a wise man, the Bishop was, unquestionably, too much governed by his passions; and these sometimes led him, in his reflections upon great questions of domestic policy, and upon the changes and revolutions of the ministry at home, to speak of those who were opposed to him, with a deep irony, and bitter malevolence, which trespass equally against candour, and the rules of fair and honourable controversy. But with respect to his account of the affairs of Scotland, certainly among the most interesting and curious portions of the work, though his ill-judging critics have, with singularly bad taste, characterized it among the dullest and most wearisome, the gallery of portraits there exhibited, is finished with scrupulous accuracy. In his delineation, also, of the leading Presbyterians and Episcopalians we meet with an impartiality which the prejudices of education and profession can scarcely be perceived to warp: thus reflecting the highest credit upon his independence as a politician, and his tolerant

principles as a churchman. The discontent and impatience, the loud and angry clamours, which spread and multiplied under the Scottish government in the reigns of the two last Stuarts, and which converted the whole country into a field of blood,—the levity, caprice, and tyranny, which prevailed in the councils of Middleton, Sharp, and especially Lauderdale, the heroic and courageous sufferings of the Covenanters, and the fanaticism and sanguinary spirit to which they gave birth, are all powerfully painted. Nor does he ever stand forth more conspicuously a true, devoted, and indefatigable servant of his country, than when, in his descriptions of these distracting periods of Scottish history, he labours to impress the ruling authorities with the criminality of obstinately maintaining those abuses which are hateful to the people, and with the imperious necessity existing, in times of general discontent, to execute the law of the land with steady hands, accompanied by a spirit of conciliation.

We are, sometimes, betrayed into dangerous prejudices by a principle of association, rather than by decision of judgment. Unless Burnett, however, can make a steady appeal to facts, no such apology can be offered for the severe strictures he has passed upon the great majority of his profession. The case, indeed, must be very clear, strong, and important, which could justify a divine, and especially a bishop, in putting forth such a sentiment as the following:—"That he was always inclined to think ill of churchmen till he saw cause to think otherwise:"—a dictum much more offensive to clerical ears, than that well-known sarcasm pronounced by Lord Clarendon, "that clergymen understand the least, and take the worst measure of human affairs, of all mankind who can read or write."

Now to suppose, as some have done, that Burnett railed against the priesthood because he hated it, is unworthy of any serious notice; especially when his unceasing, and, at last, successful efforts to employ those funds for the benefit of the inferior clergy which Charles II. had lavished among his mistresses and natural children, must ever be regarded as a striking proof of his zeal for the interest of his order, as well as of his own earnest feelings in behalf of moral and religious truth. Whoever has examined the subject in

question without bias or prejudice, must concede that though, from the Restoration to the Accession of the house of Hanover, the Anglican Church could exhibit some instances of the most commanding talents, and of the most primitive virtues—men who were the pillars of fire which brighten the darkness of the night, and make straight the paths of the wilderness,—yet that the zeal of many of its ministers slackened to a degree which justifies us in affirming, that they proved unfaithful to their trust. These nodded beside the altar, while rash and presumptuous hands were heaping unhallowed fuel upon it, under the plausible pretence that the sacred flame was extinct. By their culpable supineness and indifference, a hideous breach was thus made in the fortress of our faith, by infidels, and scorers, which had nearly enabled them to shake its very foundations. The excellent Leighton spoke of the church as a fair carcase, without a spirit—the best constituted in the world, but one of the most corrupt in administration. And when Burnett represents the clergy, in his time, as “having less authority, and being more under contempt, than any other church in Europe,”—not that he affirms their lives were scandalous, but that “their conduct was negligent;” and when he adds “that they would never regain the influence which they had lost, till they lived better, and laboured more,” we must come to one or other of these conclusions—either, that he who penned these sentiments in utter disregard of some of the dearest interests of mankind entertained the unnatural wish of lowering the consequence of the order to which he belonged—that he had a secret gratification in making it the specific ground of his revilings; or that, perceiving in the constitution of the church the elements of all that is good and great—as bearing, most vitally and essentially, on the best interests of the commonwealth—he felt that it would be a betrayal of his duty, as one of the governors of that church, not to do his utmost to urge on that moral and religious change which should demonstrate to the public at large, that the church, however she appeared to languish and decay, might soon, by the confederated zeal of a renovated clergy, be raised from the ground on which she lay, and shake off the dust by which her original lustre had been so long obscured.—Such, then, as think Burnett capable of libelling the clergy, the

guides and comforters of the people, will not hesitate to pronounce that he was despicable as an ecclesiastic, and hateful as a man.—While those who are not of this opinion will, like myself, trace the principles of that conduct which has been the theme of such copious invectives,—which has heaped on his name, for an hundred years, the charges of spleen; malice, and ingratitude—to an overpowering zeal, and to a fixed determination of maintaining the cause of religion and virtue, through good report and evil report, and of holding nothing so high in policy, as the conscientious discharge of his christian duties.

The truth is, that Burnett had evidently formed to himself a very lofty standard of attainable perfection in the discharge of his episcopal functions; and he seems never to have remitted his exertions to elevate and conform himself to it in every particular. Others of his contemporaries may have brought more precious contributions to sacred literature,—may have fought the battles of orthodoxy better than he,—may have been surrounded with prouder triumphs of authorship,—but his name, associated with the strict and undeviating performance of the primitive and essential duties of his office, will go down to posterity in one of the most glorious pages of ecclesiastical history. I am not afraid, in this respect, to link his claims with those of any one who has worn the mitre since the Reformation.

Thus strongly led to invest the Prelacy with that deep and awful responsibility, that nothing in the concerns of earthliness could be compared to it, he yearned for the amendment of the parochial clergy; connecting with their exertions, the renovation of the land. But in bending the whole force of his mind to produce the apparatus of a preaching, pious, and popular ministry, the proper *object* and end of the national church, we are not to be surprised, that he should have given as much offence as if he had been attempting some violent reform—as if he had stepped out beyond the direct and conscientious line of his duty. To the superficial eye, a fervent attachment to an institution appears, indeed, perfectly incompatible with a keen and painful sense of its defects. And Burnett at one time, for assuming the intrepidity of a prophet of old, and denouncing, in the ears of royalty itself, all the profligacies which disgraced

and deformed it, and at another, for telling the clergy of their faults, has passed with many, for an enemy to the established authorities of the country; whereas, those who love truth more than party, may very confidently affirm, that a real and honest principle of Christianity lay at the root of these reproofs, and that it was he, and such as he, who, in the day of national calamity and danger, would be found to diffuse over the whole sphere of his influence, the virtues of order, peace, and loyalty.

It was one of Burnett's favourite sayings, that a bishop in his diocese should be the leader of no particular class of persons, but the head and father of his people. How far his conduct rose into a consistent exemplification of this wise remark, may be deduced from the general spirit and tenor of his episcopal proceedings. Counting it for an undeniable fact, that the pastoral clergy were the instrumental cause of all the vital and substantial christianity in the land,—the very fountain heads of national morality,—he spared no pains to acquire a thorough knowledge of the habits, intellect, condition and general circumstances of every clerical individual in his diocese. Family alliances, property, and wide-spreading connexions had no share in his patronage, unless the possessors of them were respectable for their learning, exemplary for their lives, or useful for their ministry. Nor did he keep a scowling front, or view with emotions bordering on exclusion or bigotry, such of his clergy as happened to differ with him on speculative points of religion, or upon grounds merely political, like the Non-jurors; but sought to throw all their differences into the back ground, and only to bring forward those great and substantial points of agreement which might bind them together by a strong feeling of brotherhood. Even to those, too, who were of unconfirmed character or of lax morality, he assumed not a repulsive and hostile aspect, or rebuked their offences in an intolerant tone, as if he were unconscious of his own imperfections; but diffused such gentleness into his judgments, as made it difficult for them to withstand his honest, benignant, and persevering kindness. Yet while acting with all the courtesy of a gentleman, the dignity of a bishop, and the charity of a christian,—and at all times encouraging and heartening the deserving in their career by his cheering smiles of

approbation, and by his animated expressions of applause,—has this estimable prelate been represented, by the turbulence of faction and profligacy of party in his own days, as the secret despiser of the majesty of the throne and the sanctity of the altar. Time, however, is most disinterested, and, to vindicate what there has been said amiss, has come with healing on his wings. Dipping his pen in the colours of truth, he has painted Burnett for the contemplation of a more impartial posterity, as a patriot who understood and venerated the real principles by which different parts of the constitution were adjusted,—as a churchman who lifted up his protesting voice against unworthy appointments by lay as well as ecclesiastical patrons,—who hated nepotism, pluralities, and sinecures in cathedrals,—who declared, that, were he to raise fortunes for his children out of the income of his bishopric, he should consider himself guilty of the greatest crime,—and, lastly, who shrunk not from avowing, that, to suffer himself to be converted into a ministerial tool, was to lower himself from the pure and lofty sphere in which alone he ought to breathe and act. Whatever judgment may be passed on the other parts of this History, and though it may still be with some a fixed article of literary faith, that the author's personal character was a compound of spleen, malice, and ingratitude, these memorable words will be read and remembered with warm approbation by every right-feeling and sound-thinking christian. “The more abstracted that bishops live from the world, from courts, from cabals, and from parties, they will have the more quiet within themselves, and they will, in conclusion, be more respected by all, especially if an integrity and a just freedom appear among them in the House of Lords, where they will be much observed, and judgments will be made of them there that will follow them home to their dioceses. Nothing will alienate the nation more from them, than their becoming tools to a court, giving up the liberties of their country, and advancing arbitrary designs.”

It was as natural, however, for those who had hearts as uncharitable as their intellects were narrow, to ascribe these constitutional admonitions to the influence of bad passions and to factious purposes, as for common and every day minds to impute his interference in state matters solely to a sordid love of avarice, and to views of per-

sonal aggrandisement; though certainly, of all studied historical misrepresentations, that may be pronounced among the chiefest, which affixes the character of cold, calculating, mercenary self-interest to the name of Burnett,—which makes place and emolument the reigning idols of *his* soul. Any candid and competent inquirer into the leading events of Burnett's life, must, indeed, regard this accusation with the deepest contempt. For can *he* be charged with a mean and interested struggle for wealth and patronage, who refused the Archbishopric of Glasgow, and the See of Chichester, disdaining to league himself with a government which, with all the ostentation of loyalty, by manifesting the most bare-faced abandonment of public principle for the sake of private advantage, sapped the very foundation on which loyalty is reared? Nor should his readiness, afterwards, to accept the lucrative Bishopric of Durham tempt us to doubt that the praise due to him for the foregoing refusals is beyond his deserts; though satire, which holds nothing in reverence, attributes his seeking the last rich prize to the unprincipled desire of raising fortunes for his illegitimate children.

It is not wonderful, therefore, after this preposterous assertion, to find the impugnors of this honest, and generally useful, friend of his country, so often apostrophized by them with the scurrilous epithets of state intriguer, factious intermeddler, and pamphleteering bishop.

Now, early conscious of the might that lay within him—for even those who hated him most allowed him to be possessed of a comprehensive understanding—well acquainted with the opinions and sentiments of the best authors—with the maxims of the most profound statesmen—and with the character, views, and resources, of other European nations, besides his own—upon these grounds alone, he was naturally disposed to try his strength in political as well as spiritual warfare. Burnett seems to have entered into the secular politics of the day, as much under the influence of an imperious sense of duty as if some superior being had the items of his political as well as moral and religious existence. It was this well-placed confidence, therefore, in his mental powers—and not the wish to amass or aggrandize—it was this anxious concern for the liberties of his country, which led him to mix so much in the commerce of the world, and to take such a deep interest and regard

in civil affairs. The ambition he had, no doubt, in common with other men of great and commanding intellect, of wishing to raise himself "to high places." But it was the honourable and holy ambition of connecting his own with the promotion of the public welfare,—conceiving, and, in my mind, rightly conceiving, that neither his christian vocation nor episcopal office forbad, but, on the contrary, justified and required his political exertions in behalf of a country, which he had ever loved with a patriot's spirit. Yet, for urging his principles and maxims with so much energy and truth—for displaying the most praiseworthy feelings, he has been ridiculed, scorned, and cursed, by many a renegade Whig, and ultra Tory. Undoubtedly it would have been out of place for the servant of the altar, if Jacobitism had then been what it now is, merely a name. But every one who is acquainted with the history and transactions of this period, well knows that this was not the case. At the time of the Revolution, a strong Jacobite party existed in the cabinet itself. And not only in the reign of William the Third, but of Anne, and George the First, the accession of a popish king, especially as foreign powers were then favourable to it, was an event not entertained by the chimerical apprehensions of Burnett alone, but was contemplated as something more than barely possible, by some of the leaders in the conflicting parties of the state.

But here arise two interesting questions, which, at the first glance, it may appear difficult to answer in a satisfactory manner. Why a man, who was thus forward to assist the progress of just and liberal views among his fellow citizens—whose predominant passions were for religion and liberty, in the cause of which he had laboured, sorrowed, rejoiced, prayed, and to which he dedicated his whole life, should be so insufficiently appreciated by those who witnessed these his great merits, as to create in them a dislike bordering on aversion? And why a divine of his eminence, should be irreconcilably repugnant to those, between whose political sentiments and his own opinions there existed the closest bond of union? It may be answered to the first question, that Burnett, as a Scotchman, was hateful to his countrymen, from his decided attachment to the Church of England; the members of which, on the other hand, could not resist the belief from his supposed bigotted nationality, that he sympathized too warmly with the presbyterians, and there-

fore it passed into a settled conviction in the minds of many, that he was hostile to that hierarchy and parochial clergy, which it was his single object to render the blessing and glory of the land. But if they had been called upon to state the grounds of their suspicion and mistrust, strong as they were, they must have been content to rest them upon his occasional advocacy of the cause of the dissenters, though he never upheld it in such a manner as to impeach the rectitude of his doings, as an ecclesiastical ruler; for I am not prepared to allow this invidious remark of Noble, "that he was in profession a prelate, in sentiment a dissenter." Now why he should have rendered himself obnoxious to those with whom, upon all questions of great public importance he generally sided, may certainly be thought a strange and almost incredible anomaly in politics. The explanation of this phenomenon is to be found in certain peculiarities in the character of Burnett.

Holding the same language with the Whigs respecting the British constitution, and by no means averse to the name and functions of a party-man, his mind was of too firm, uncompromising, and conscientious a cast, to make that sacrifice of private judgment, which the principle of party requires. Upon points where the object evidently sought was not so much the general good, as the gratification of private views, passions, and resentments, he was bold to shake off this thralldom,—to call things and persons by their right names—and to show himself as honest in the practice as in the theory of his politics, by speaking as vehemently and bluntly to his friends, as to his antagonists. Fearing the face of no man, he scorned to bend to their prejudices, or to lean to their particular interests or considerations. There was a magnanimity of principle which made knaves feel as knaves—and fools as fools.—Here, then, shone forth, in Burnett, the primitive simplicity of the christian minister. And this it was which caused so many of his political associates to be backward in their commendation of his high moral and intellectual endowments. In this way only, can the two foregoing questions admit of an easy and ready solution.—This will afford the clue to the labyrinth in which he fell short of popularity with that party, with whom it was reasonable to conclude, that he would have been most popular.

All this being thus explained,—for without the foregoing com-

ment, the sentiments expressed towards him by many of the Whigs, both in church and state, would be wholly unaccountable—it will be matter of astonishment to none of my readers, that some of that party should be forward in their attacks upon his History. Cunningham, as well as Lord Dartmouth, in his personal aversion to the author, is even disposed to rank his occasional egotism among the cardinal offences of this performance: when others, whose judgments are unwarped, will be almost inclined to regard his being so full of self-importance, as a circumstance rather pleasing than otherwise,—to consider it as the natural and becoming egotism of a man who hopes to give a proof of his sincerity, when he talks as familiarly about himself as about other men. Self-love, perhaps, is never less unamiable and useless to society, than where it shews itself with frankness and good-nature; and it is only intolerable when it is displayed under affectation of concealment. The Bishop's egotism is, therefore, agreeable, as being without affectation. He does not write of himself for want of other materials for writing, but because some circumstance that has happened to himself is the best possible illustration of the subject; and he is not the man, through fastidious delicacy, to shrink from giving this best possible illustration. He likes himself and his subject too well. Those, however, who are “made of sterner stuff,” will turn, with a sort of inward disdain, from these self-references, and regard them as the folly of a diseased and egotistic mind. But in the severity of their censures against Burnett, for always talking of himself, they quite overlook the value of the lesson which, in so doing, he imparts to his readers. They do not feel that, in making us intimate with himself, he, also, makes us intimate with ourselves; that, in this exposure of his own weaknesses, he teaches us to observe those by which we are ourselves enfeebled; and thus unmasks, as it were, for examination, the secret infirmity of our own bosoms. Those, therefore, who follow the courses of his mind, like the courses of his upright life, with sympathy and approbation, can read, with a good-natured smile, his recountings of his early importance in the world—can regard, as pardonable vanity, his self-commendations—his depicting of his influence, talents, and celebrity—nay, can even go the length of thinking that the following remarks upon being called, when a stripling, to act a conspicuous part on the the-

atre of public fame, not only contributes to render his book more instructive, but more interesting. "They (alluding to the ministers who tyrannized over Scotland, in the reign of strumpets and Charles II.), had such an imagination of some service I might do them, that they treated me with a very particular freedom and confidence. But I had drunk in the principles of moderation so early, that though I was entirely episcopal, yet I would not engage with a body of men that seemed to have the principles and tempers of inquisitors in them, and to have no regard to religion in any of their proceedings."

Two years afterwards, "it was thought," he says, "that Lord Lauderdale was preparing me, as one who was known to have been always episcopal, to be set up against Sharp (the Archbishop) and his set of men, who were much hated by one side, and not loved nor trusted by the other."

In 1762, he describes himself as eager to forsake the court altogether, yet suffering himself to be wrought on by the persuasions of others who remained there. "Many found I did good offices.—I got some to be considered and advanced that had no other way of access. But that which made it more necessary was, that I saw Sharp and his creatures were making their court with the most abject flattery. Leighton went seldom to them, though he was always treated by them with great indulgence; so it was necessary for me to be about them and keep them right, otherwise all our designs were lost without recovery."

The next instance of self idolatry is still perhaps more amusing and more characteristic of the man and of his book. "While I was at the court, (of France) which was only for four or five days, one of the king's coaches was sent to wait on me, and the king ordered me to be well-treated by all about him; which, upon that, was done with a great profusion of extraordinary respects: at which all people stood amazed. Some thought it was to encourage the side against the court, by this treatment of one then in disgrace; others, more probably, thought that the king, hearing I was a writer of history, had a mind to engage me to write on his side. I was told a pension would be offered me: but I made no steps towards it; for though I was offered an audience with the king, I excused it. After a few months' stay, I returned, and found both

the king and the duke were highly offended with the reception I met with in France. They did not know what to make of it, and fancied there was something hid under it."

If we are to be influenced by the vulgar sneers at Burnett's patriotism, we are to convert his honesty in telling the nation all its faults, into a secret pleasure in railing against its most revered institutions. Undoubtedly, he who should expose these faults, runs the risk of being treated as the enemy of his country, by those whose national partialities are so excessive that they will even magnify defects into excellences. Is it not, however, unreasonable to suppose, that a man can pour forth the most virtuous anxieties for the public good, and not at the same time be warmly attached to the constitution? It is impossible, indeed, I think, for any unprejudiced person to read the memorable address that concludes the Bishop's posthumous labours, without perceiving, that upon no human heart did the claims of his country ever fall more deep and irresistible. To the very last, he never slumbered nor slept upon his post; but laboured to improve mankind, by teaching and declaring what he deemed to be the truth. The warm, the ennobling strain of patriotism which breathes throughout this appeal, the artless but solemn pathos which marks some of its passages, the unworldly purity and simplicity, the strength of reason, the ardent love of religious liberty and justice which pervade its pages, should have taught his enemies to respect a name which all upright men must revere. As the flowers send up their sweetest odours at the close of day, as the sun appears with the greatest beauty at its going down, all the virtues and graces of this excellent prelate come before us in this final address with the most pleasing remembrance. The most careless of readers will peruse it with the deepest conviction of all the sentiments having proceeded from the author's heart; while written, as it is, at an advanced period of life, it has all the determination of age and decision of principle; and I am bold enough to add, that if all which Burnett had given to the public, were comprised in this brief paper—such are the lights which shine unclouded in it,—such are the pearls of rare price to be picked out of it,—it alone would have entitled his memory to be contemplated with the highest veneration. His statesman-like remarks upon episcopal, ecclesiastical, parliamentary, and aristo-

cratical abuses,—upon a radical reformation of the people by education and a good judicature,—his further observations upon the employment of able men in diplomacy,—and of the best means of a sovereign's obtaining the noblest reward of his labours, the love and esteem of his subjects,—have been the themes of panegyric among all competent judges. At a period, too, when the science of political economy was little known or attended to, the suggestions of Burnett, respecting that most important branch—the bettering the condition of the poor,—evinced a sagacity and sound sense very surprising in their start before the public mind, if we consider the direct contrary notions so current with the best and wisest statesmen of his day : “The other matter that must take its rise in the House of Commons is about the poor, and should be much laid to heart. It may be thought a strange notion from a bishop to wish that the act for charging every parish to maintain their own poor, were well reviewed, if not quite taken away ; this seems to encourage idle and lazy people in their sloth, when they know they must be maintained. I know no other place in the world, where such a law was ever made. Scotland is much the poorest part of the island ; yet the poor there are maintained by the voluntary charities of the people.”

Strong claims, however, as the History of his own Time possesses to our attention, from having been written, according to a former observation, at a most interesting period, in which the author was not merely a spectator, but often an actor in some of the most important and striking scenes described in it ; yet, as a piece of composition, it must be confessed, that it will stand very low in the estimation of those who are fond of pretty conceits and laborious efforts after fine writing. Swift, who hated Burnett, if it were only because the consistency of his political attachment reminded him of the baseness and profligacy of his own apostacy, has been scurrilous to the last degree respecting the style of his performance. Unquestionably, it has too great a profusion of low, familiar and colloquial forms of expression,—though graphic and acute, the manner is too often garrulous and vulgar. The sterling weight, however, of most of his observations, and the masterly boldness which often sketches a portrait in a single line, will more than compensate for the want of polished sentences and figurative modes of speech. Things, not words—the matter, not the manner of the

book, were what Burnett principally regarded. He thinks, and therefore makes his readers think—i. e. reflect; since, according to a striking aphorism of his model and master, Archbishop Leighton, “he only thinks who reflects.”

In this, as in most of his other productions, Burnett appears to have left his sentences just as the fervid heat of his imagination struck them out. The duties of his life were too multifarious to allow time to give to all his opinions a comely and suitable covering; much less to be studious of “taffeta phrases, or silken terms precise.” He said what he had to say in long or short sentences, with little or no regard to the turn of a phrase, to the music of a cadence; not hesitating, in his dramatic narrative, to use any image or expression, however coarse or homely, provided it conveyed his meaning with liveliness and force. There were no strainings for false and meretricious ornaments, for mawkish sentiments, extravagant and sparkling conceits, nor any attempts to hide a want of meaning under the semblance of a stern and pompous wordiness. Impartial criticism may assert that the work bears all the traces of a rugged and careless composition; but, at the same time, it will not deny that this defect is amply atoned for by the warm, native, and ever-varying graces of a spontaneous effusion. It is a question, if Burnett’s language, from its idiomatical strength, did not shew that the author had drawn more freely of the pure well of English than many of the wits of the Augustan period,—as the reign of Queen Anne has been designated. At least, in comparing his cast of phraseology, especially in his sermons, with that of several of his own countrymen of recent celebrity, he does not, like them, from the dread of falling into scotticisms, lose much of that which Dr. Johnson has denominated, genuine anglicism.

Swift pretends to discover, in almost every line of the Bishop’s work, striking instances of error, ignorance, partiality, fraud, and misrepresentation: while, according to his judgment, from the coarseness and vulgarity of its style, it is, as a composition, beneath criticism. But, after a repeated, after a serious, and, I hope, after an impartial perusal of this work, I speak, I am persuaded, the language of sound criticism, when I assert, that the *Memoirs of the reign of Queen Anne*, which Swift himself designates as his master-piece, and which, without doubt, he meant to be one of those

eternal possessions that great minds generate and perfect in retirement, will be utterly forgotten, or if remembered, will—from its tame, monotonous, and colourless style—its wilful perversions and malevolent misrepresentations—its accumulated mass of personal abuse and intolerant zeal,—its insolent dogmatism and absurd pretensions to the dignified form of history,—be only cited as a performance deserving the most just contempt from friends* as well as enemies; while, on the other hand, the History of his own Time, from its masculine and energetic style,—the perspicuity and acumen of its observations—the breathing vitality of its portraits—the honesty of its opinions—the bold spirit of its criticism upon the public men of the day—and the profound knowledge of the transactions recorded—will transmit the name of Burnett to future generations, as one of the most instructive and most amusing of memoir writers.

H. C.

Great Malvern, September 10, 1835.

* If the Dean had not been so peremptorily opinionative, so desperately pertinacious in this matter, he would, it is to be presumed, have listened to the advice of Pope and Bolingbroke, whose penetration, taste, larger views in history, and great talents for composition, alike led them to oppose the publication of this wretchedly stupid work. Never was a truer criticism pronounced upon it than in the following remarks of Horace Walpole. "There is just published Swift's history of the four last years of Queen Anne. Pope and Lord Bolingbroke always told him it would disgrace him, and persuaded him to burn it. Disgrace him, indeed, it does; being a weak libel, ill-written for style, uninformed, and adopting the most errand mob stories. He makes the Duke of Marlborough a coward, Prince Eugene an assassin, my father remarkable for nothing but impudence, and would make my Lord Somers anything but the most amiable character in the world, if, unfortunately, he did not praise him while he tries to abuse."—*Letters to Sir Horace Mann*, vol. iii, p. 317—318.

[Our thanks are due to the learned writer for this admirable article, as also for six highly interesting papers in former numbers of "*The Analyst*;" more especially that on Charles II, which was executed in so masterly a style as to obtain the unqualified approbation of one of the most accurate thinkers upon all curious matters of History. The subject here alluded to was so full of perplexities that it quite baffled the sound and vigorous understanding of the Edinburgh Reviewer. The importance, indeed, of a paper which clears up difficulties embarrassing to many a statesman of the present day, cannot be too highly appreciated by the student of English History.—
ED.]

REMARKS CONDUCTIVE TO THE IMPROVEMENT OF ORNITHOLOGICAL NOMENCLATURE.

In a former paper, (vol. ii., p. 305), I pointed out some very glaring errors in the nomenclature adopted by Selby in his *British Ornithology*. I shall now do what I conceive will be of still greater utility, and what I have often been asked to do,—give a list of the birds of Britain; each species denoted by its proper generic and specific appellation. But before commencing the list, I shall make a few remarks on the subject, which appear to be peculiarly called for, when there are writers who openly maintain that the names in use, whether right or wrong, ought to be continued, simply because they *are* in use,—writers, too, who do not simply adopt the vulgar names from mere thoughtlessness, or from thinking the subject beneath their attention, but who, having considered the subject, actually defend what they themselves confess to be erroneous, because it would give too much *trouble* to learn what is right!

I do not here mean to refute any of Mr. Strickland's arguments for his vulgar names; but one assertion I cannot let pass unnoticed, namely, that the newly-introduced English names are certain never to be universally adopted. Let Mr. Strickland turn to the ornithological works of the time of Willoughby or of Edwards, and compare the English names therein used with those of Selby or Mudie; or let him compare the French names used by Buffon, with those of Vieillot or Temminck. In Willoughby's work he will find Water Hen, Water Ouzel, Solan Goose, Sea Lark, Greenland Dove, Land Hen, and many other equally ridiculous and erroneous names, which, in Selby's work, are designated as follows: Gallinule, Dipper, Gannet, Plover, Rotch, and Crake, and by these names they are now universally known, except by those, indeed, who "don't know a rose from a cabbage."

Boswell, in his life of Johnson, speaking of orthography, says, that Johnson very strongly expressed his disapprobation at the practice, which was then creeping in, of omitting the *k* at the end of such words as *public*, *music*, &c.; and Boswell adds, that he really hopes that so great an authority will have the effect of stop-

ing the innovation. But it did not. From the alteration of a letter to the alteration of the laws of the land, reform *will* take place, however great the authority which opposes it,—hand joined in hand would in vain attempt to stem the tide of improvement. Wilson effected some beneficial changes in names, such as Orchard Oriole instead of Bastard Oriole. I will quote some of his comments on this name :—“ I cannot but take notice of the name which naturalists have bestowed on this bird, and which is certainly remarkable. Specific names, to be perfect, ought to express some peculiarity, common to no other of the genus, and should, at least, be consistent with truth ; but in the case now before us, the name has no one merit of the former, nor even that of the latter, to recommend it, and ought, henceforth, to be rejected as highly improper and calculated, like that of *Goatsucker*, [properly *Nightjar*, *Vociferator*, *N. Wood*], and many others equally ridiculous, to perpetuate that error from which it originated.” It is to be wished that Wilson had always acted on the same liberal and fearless principle ; but, in several instances, as in that of the *Aquila leucocephala*, he has allowed baneful custom to overcome his reason : he asserts the specific name, *Bald*, to be “ equally improper and absurd ; and yet says, “ the appellation, however, being now almost universal, is retained in the following pages.” But Audubon, instead of yielding to what he knew to be wrong, corrects the error, and calls the bird, “ White-headed Eagle.” Even Audubon is not entirely free from the charge of following in the sheep-track, as it were, as may be seen by the following passage ;—“ But names already given and received, whether apt or inapt, I am told, must not be meddled with. To this law I humbly submit, and so proceed, contenting myself with feeling assured that many names given to birds might, with much benefit to the student of nature, become subjects of reform.”* I should hardly have thought that a writer of so strong a mind as Audubon, would, merely because he had been *told* so and so, have sacrificed to authority what he knew to be for the good of the ornithological student. However, the greatest minds have their failings.

* Ornithological Biography, vol. i., p. 394.

I shall here make a short quotation in point, from the writings of Charles L. Bonaparte, who has generally correct views on the subject:—"According to Buffon and Vieillot, this bird is a permanent resident in the West Indies, where, as they state, the name is sometimes applied to it of *Fausse Linotte*. We, however, can perceive scarcely any resemblance, except in its dull state of plumage to a similar state of the Redpoll Finch, (Redpoll Linnet, *Linaria rubra*, Will.). The name of *Bimbelé*, by which it is known among the negroes of those countries, is derived from the recollection of an African bird, to which, probably, the resemblance is not more evident. Unfortunately, this propensity of limited minds, to refer new objects, however distinct, to those with which they are acquainted, seems to have prevailed throughout the world, and is found exemplified no where more absurdly than in the Anglo-American names of plants and animals."† This case is exactly similar to that before brought forward of House Sparrow and Hedge Dunnoc. The West Indians would call the Palm Warbler a Linnet, and Mr. Strickland would call the Hedge Dunnoc a Sparrow. However, in every successive work on the subject, there is an improvement; and it is much to be hoped that, as sound principles are acquired, exactitude will be proportionately attained.

I shall now give a list of the Birds of Britain, as divided by Vigors into five orders,—Raptores, Insessores, Rasores, Grallatores, and Natatores.

ORDER I.

RAPTORES, VIGORS.

Family II.—Vulturidæ.

Genus, Neophron, (*Sav.*), Neofron.

White-headed Neofron Neophron leucocephalus.

**Family III.—Falconidæ.*

Section, Aquilina. Genus, Aquila, (*Antiq.*), Eagle.

Golden Eagle Aquila aurea (*Will.*)

Genus, Ossifraga, (*W.*), Ossifrage.

Cinereous Ossifrage Ossifraga albicilla (*W.*)

† Art. Palm Warbler, *Sylvia palmarum*.

- Genus, Pandion, (*Sav.*), Ospray.
 White-headed Ospray,* Pandion leucocephalus, (*W.*)
 Section, Accipina. Genus, Astur, (*Bechst.*), Gossuc.
 Rock Gossuc Astur palumbarius, (*Bec.*)
 Genus, Accipiter, (*Auct.*), Hawk.
 Sparrow Hawk Accipiter nisus, (*W.*)
 Section, Falconina. Genus, Falco, (*Lin.*), Falcon.
 Jer-Falcon Falco rusticolus, (*Gm.*)
 Peregrine Falcon F. peregrinus, (*Lin.*)
 Hobby Falcon F. arboreus, (*W.*)
 Red-footed Falcon F. rufipes, (*Bech.*)
 Kestrel Falcon F. tinnunculus, (*Lin.*)
 Merlin Falcon F. æsalon, (*Tem.*)
 Section, Buteonina. Genus, Buteo, (*Bech.*), Buzzard.
 Variegated Buzzard B. variegatus, (*W.*)
 Rough-legged Buzzard B. lagopus, (*Flem.*)
 Genus, Pernis, (*Cuv.*), Pern.
 Honey Pern P. apivorus, (*Cuv.*)
 Genus, Circus, (*Bech.*), Harrier.
 Marsh Harrier C. rufus, (*Bris.*)
 Hen Harrier C. cyaneus, (*Flem.*)
 Ash-coloured Harrier C. cineraceus, (*Shaw*)
 Section, Milvina. Genus, Milvus (*Auct.*), Kite.
 Gliding Kite M. regalis, (*Bris.*)
 Genus, Elanus, (*Sav.*), Forktail.
 White-headed Forktail Elanus naucularus, (*W.*)
 Family IV.—Strigidae.
 Genus, Bubo, (*Cuv.*), Toad-eater.
 Yellow-legged Toad-eater Bubo flavipes, (*W.*)
 Genus, Asio, (*Antiq.*), Madje.
 Heath Madje Asio ulula, (*N. Wood*)
 Long-eared Madje Asio arborea, (*W.*)
 Genus, Scops, (*Sav.*), Scops.
 Tree Scops Scops zorca (*W.*)
 Genus, Nyctea, (*Dumer.*), Snowflake.
 Gray Snowflake Nyctea cinerea, (*Steph.*)
 Genus, Strix, (*Antiq.*), Owl.
 Barn Owl Strix flammea (*Lin.*)

* It is curious that the four first birds of the British Fauna are among those prohibited in the Old Testament: "the Eagle, and the Ossifrage, and the Ospray, and the Vulture shall not be eaten" "We presume," with Wilson, "that this prohibition was religiously observed, so far, at least, as it related to the Vulture, from whose flesh there arises such an unsavory odour, that we question if all the sweetening processes ever invented could render it palatable to Jew, Pagan, or Christian."

	Genus, <i>Surnia</i> , (<i>Steph.</i>), Surn.
Ivy Surn	<i>Surnia stridula</i> , (<i>Steph.</i>)
	Genus, <i>Noctua</i> , (<i>Cuv.</i>), Nightling.
White-breasted Nightling	<i>Noctua funerea</i> , (<i>W.</i>)
Sparrow Nightling	<i>Noctua passerina</i> , (<i>Selby</i>)*

ORDER II.

INSESSORES, VIGORS.

Yellow-throated Bee-eater	<i>Merops chrysocephalus</i> , (<i>Lath.</i>)
Garrulous Roller	<i>Coracias garrula</i> , (<i>Lin.</i>)
Chimney Swallow	<i>Hirundo rustica</i> , (<i>Lin.</i>)
Window Swallow	<i>Hirundo urbica</i> , (<i>Lin.</i>)
Bank Swallow	<i>Hirundo riparia</i> , (<i>Aldr.</i>)
Wall Swift	<i>Cypselus murarius</i> , (<i>Tem.</i>)
Alpine Swift	<i>Cypselus alpinus</i> , (<i>Tem.</i>)
Fern Nightjar	<i>Vociferator melolontha</i> , (<i>W.</i>)
Minnow Kingfisher	<i>Alcedo ispida</i> , (<i>Lin.</i>)
Spotted Flycatcher	<i>Muscicapa grisola</i> , (<i>Lin.</i>)
Pied Flycatcher	<i>Muscicapa luctuosa</i> , (<i>Tem.</i>)
Cinereous Shrike	<i>Lanius excubitor</i> , (<i>Lin.</i>)
Red-backed Shrike	<i>Lanius colluris</i> , (<i>Lin.</i>)
Wood Shrike	<i>Lanius rutilus</i> , (<i>Lath.</i>)
Missel Thrush	<i>Turdus viscivorus</i> , (<i>Lin.</i>)
Field Thrush	<i>Turdus pilaris</i> , (<i>Will.</i>)
Garden Thrush	<i>Turdus hortensis</i> , (<i>W.</i>)
Red-winged Thrush	<i>Turdus iliacus</i> , (<i>Will.</i>)
Yellow-billed Ouzel	<i>Merula vulgaris</i> , (<i>Will.</i>)
Ringed Ouzel	<i>Merula torquata</i> , (<i>Will.</i>)
Rivulet Dipper	<i>Cinclus lutans</i> , (<i>W.</i>)
Garden Oriole	<i>Oriolus galbula</i> , (<i>Lin.</i>)
Fallow Wheat-ear	<i>Saxicola cinerea</i> , (<i>W.</i>)
Whin Chat	<i>Rubetra migratoria</i> , (<i>Blyth</i>)
Stone Chat	<i>Rubetra rubicola</i> , (<i>Blyth</i>)
Robin Redbreast	<i>Rubecula familiaris</i> , (<i>Blyth</i>)
Tree Redstart	<i>Ruticilla arborea</i> , (<i>W.</i>)
Tithys Redstart	<i>Ruticilla tithys</i> , (<i>W.</i>)

* In the four remaining Orders, I shall not give the Tribes, Families, and Sections, as my present aim is more Nomenclature than Classification.

Blue-throated Fantail	<i>Pandicilla suecica</i> , (<i>Blyth</i>)
Sibilous Brakehopper	<i>Locustella sibilatrix</i> , (<i>W.</i>)
Sedge Reedling	<i>Salicaria phragmitis</i> , (<i>Selby</i>)
Marsh Reedling	<i>Salicaria arundinacea</i> , (<i>Selby</i>)
Brake Nightingale	<i>Philomela lusciniæ</i> , (<i>Sw.</i>)
Black-capt Fauvet	<i>Ficedula atricapilla</i> , (<i>Blyth</i>)
Garden Fauvet	<i>Ficedula hortensis</i> , (<i>Blyth</i>)
White-throated Fauvet	<i>Ficedula cinerea</i> , (<i>Blyth</i>)
Garulous Fauvet	<i>Ficedula garrula</i> , (<i>Blyth</i>)
Furze Red-eye	<i>Melizophilus provincialis</i> , (<i>Leach</i>)
Hedge Warbler	<i>Sylvia hippolais</i> , (<i>Lath.</i>)
Wood Warbler*	<i>Sylvia sibilatrix</i> , (<i>Bechst.</i>)
Yellow Warbler	<i>Sylvia trochilus</i> , (<i>Lath.</i>)
Gold-crested Kinglet	<i>Regulus auricapillus</i> , (<i>Selby</i>)
Fire-crested Kinglet	<i>Regulus ignicapillus</i> , (<i>Mudie</i>)
Garden Tit	<i>Parus hortensis</i> , (<i>W.</i>)
Blue Tit	<i>Parus cæruleus</i> , (<i>Will.</i>)
Marsh Tit	<i>Parus palustris</i> , (<i>Will.</i>)
Coal Tit	<i>Parus ater</i> , (<i>Will.</i>)
Crested Tit	<i>Parus cristatus</i> , (<i>Aldr.</i>)
Ringling Longtail	<i>Afedula sonans</i> , (<i>W.</i>)
Bearded Pinnoc	<i>Calamophilus biarmicus</i> , (<i>Leach</i>)
Hedge Dunnoc	<i>Accentor modularis</i> , (<i>Cuv.</i>)
Alpine Stare	<i>Curruca alpina</i> , (<i>W.</i>)
Pied Wagtail	<i>Motacilla maculosa</i> , (<i>W.</i>)
Grey Wagtail	<i>Motacilla cinerea</i> , (<i>Will.</i>)
Yellow Oatear	<i>Budytes verna</i> , (<i>Cuv.</i>)
Rock Pipit	<i>Anthus rupestris</i> , (<i>Nils.</i>)
Meadow Pipit	<i>Anthus pratensis</i> , (<i>Bechst.</i>)
Tree Pipit	<i>Anthus arboreus</i> , (<i>Bechst.</i>)
Tawny Lavrock	<i>Anthus fuscus</i> , (<i>Vieill.</i>)
Hawthorn Waxwing	<i>Bombycilla cratægus</i> , (<i>W.</i>)
Sky Lark	<i>Alauda arvensis</i> , (<i>Lin.</i>)
Wood Lark	<i>Alauda arborea</i> , (<i>Lin.</i>)
Snowy Longspur	<i>Plectrophanes nivalis</i> , (<i>Mey.</i>)
Lapland Longspur	<i>Plectrophanes lapponica</i> , (<i>Selby</i>)
Corn Bunting	<i>Emberiza miliaria</i> , (<i>Lin.</i>)
Yellow Bunting	<i>Emberiza citrinella</i> , (<i>Lin.</i>)
Reed Bunting	<i>Emberiza schæniculus</i> , (<i>Lin.</i>)

* Selby has most erroneously called this bird "Wood Wren," which name belongs to an American bird described by the eloquent and enterprising Audobon, in his graphic work, Ornithological Biography, vol. ii., p. 452.

Cirl Bunting	<i>Emberiza cirrus</i> , (<i>Lin.</i>)
Ortolan Bunting	<i>Emberiza hortulana</i> , (<i>Lin.</i>)
House Sparrow	<i>Passer domesticus</i> , (<i>Aldr.</i>)
Tree Sparrow	<i>Passer arboreus</i> , (<i>Blyth.</i>)
Chaff Finch*	<i>Fringilla spiza</i> , (<i>Rennie</i>)
Mountain Finch	<i>Fringilla montana</i> , (<i>Will.</i>)
Alder Siskin	<i>Carduelis spinus</i> , (<i>Steph.</i>)
Gold-winged Siskin	<i>Carduelis elegans</i> , (<i>Steph.</i>)
Brown Linnet	<i>Linaria canabina</i> , (<i>Sw.</i>)
Mountain Linnet	<i>Linaria montana</i> , (<i>Will.</i>)
Catkin Redpoll	<i>Rubricapilla alnus</i> , (<i>W.</i>)
Haw Grosbeak	<i>Coccothraustes cratægus</i> , (<i>Blyth</i>)
Green Grosbeak	<i>Coccothraustes chloris</i> , (<i>Flem.</i>)
Pippin Crossbill	<i>Crucirostra malu</i>
Pine Crossbill	<i>Crucirostra pinetorum</i> , (<i>Meyer</i>)
Pine Thickbill	<i>Densirostra enucleator</i> , (<i>W.</i>)
Hedge Coalhood	<i>Pyrhula modularis</i> , (<i>W.</i>)
Spotted Starling	<i>Sturnus varius</i> , (<i>Mey.</i>)
Rose-colored Pastor	<i>Pastor roseus</i> , (<i>Tem.</i>)
Raven Crow	<i>Corvus corax</i> , (<i>Lin.</i>)
Carrion Crow	<i>Corvus corone</i> , (<i>Lin.</i>)
Hooded Crow	<i>Corvus cornix</i> , (<i>Lin.</i>)
Rook Crow	<i>Corvus nudirostris</i> , (<i>Palmer</i>)
Daw Crow	<i>Corvus monedula</i> , (<i>Lin.</i>)
Garrulous Pie	<i>Pica melanoleuca</i> , (<i>Vieill.</i>)
Blue-winged Jay	<i>Garrulus glandarius</i> , (<i>Selby</i>)
Red-legged Chough	<i>Fregilus graculus</i> , (<i>Cuv.</i>)
Spotted Nutcracker	<i>Nucifraga punctata</i> , (<i>W.</i>)
Black Woodpecker	<i>Picus martius</i> , (<i>Lin.</i>)
Spotted Woodpecker	<i>Picus maculosus</i> , (<i>W.</i>)
Barred Woodpecker	<i>Picus virgatus</i> , (<i>W.</i>)
Green Popin	<i>Chrysomitris viridis</i> , (<i>Sw.</i>)
Emmet Wryneck	<i>Torquilla striata</i> , (<i>W.</i>)
Gray Nuthatch	<i>Sitta cæsia</i> , (<i>Mey.</i>)
Familiar Creeper	<i>Certhia familiaris</i> , (<i>Lin.</i>)
Ivy Wren	<i>Anorthura troglodytes</i> , (<i>W.</i>)
Marsh Hoopoo	<i>Upupa epops</i> , (<i>Lin.</i>)
Ash-coloured Cucoo†	<i>Cuculus canorus</i> , (<i>Lin.</i>)

* Mr. Blyth thinks the Grosbeaks (*Coccothraustes*) to be the typical form of the *Fringillidæ*; others, the Siskins, (*Carduelis*): but I agree with Selby, in thinking the Chaff Finch and Mountain Finch to be the types of the Family.

† I have given my reason for thinking that the *k* should be omitted in *Cuccio*, *Mag. Nat. Hist.* vol. viii. p. 256.

ORDER III.

RASORES,—ILLIG.

Ringed Dove	<i>Columba palumbus</i> , (<i>Lin.</i>)
Wood Pigeon	<i>Columba arborea</i> , (<i>N. Wood</i>)
Rock Pigeon	<i>Columba livia</i> , (<i>Lin.</i>)
Turtle Dove	<i>Columba turtur</i> , (<i>Boje</i>)
Wood Grouse	<i>Tetrao arborea</i> , (<i>W.</i>)
Black Lyurus	<i>Lyurus tetrrix</i> , (<i>Sw.</i>)
Red Ptarmigan	<i>Lagopus britannicus</i> , (<i>W.</i>)
White Ptarmigan	<i>Lagopus mutus</i> , (<i>Leach</i>)
Rock Ptarmigan	<i>Lagopus rupestris</i> , (<i>Auct.</i>)
Cinereous Partridge	<i>Perdix cinerea</i> , (<i>Will.</i>)
Common Red-leg	<i>Rufipes vulgaris</i> , (<i>Blyth</i>)
Common Quail	<i>Coturnix vulgaris</i> , (<i>Auct.</i>)
Bearded Bustard	<i>Otis tarda</i> , (<i>Lin.</i>)
Field Bustard	<i>Tetrix campestris</i> , (<i>Leach</i>)

BIRDS NOT STRICTLY BRITISH.

Wax-billed Finch	<i>Fringilla astrilda</i>
Java Finch	<i>Fringilla orycivora</i>
Amadivat Finch	<i>Fringilla amandava</i>
Canary Finch	<i>Fringilla canaria</i>
Cardinal Grosbeak	<i>Coccothraustes cardinalis</i>
Blue Grosbeak	<i>Coccothraustes cærulea</i>
Painted Bunting	<i>Emberiza ciris</i>
Passenger Pigeon	<i>Columba migratoria</i>
Cream-coloured Dove	<i>Peristera indica</i>
Collared Dove	<i>Peristera risoria</i>
Wood Pheasant	<i>Phasianus colchicus</i>
Virginian Partridge	<i>Perdix virginiana</i>
Common Fowl	<i>Gallus variabilis</i>
Bantam Fowl	<i>Gallus pusillus</i>
Pearled Pintado	<i>Pintado nurnida</i> , (<i>Leach</i>)
Common Turkey	<i>Meleagris sylvestris</i>
Green-breasted Pavo	<i>Pavo cæruleus</i>

The orders Grallatores and Natatores I must leave for another opportunity. The foregoing list is far from being so exact as I could have wished, and the specific names do not, in all cases, agree with the excellent rule laid down by Wilson, namely, of expressing some peculiarity common to no other of the genus. This, indeed, in several cases would be almost impossible; as in the case of the

dipper (cinclus). Speaking of two species of this genus, Bonaparte says:—"The two species are so much alike in size, shape, and even colour, as to defy the attempts of the most determined system-maker to separate them into different groups." And thus (especially as the localities and habits of all the members of this interesting genus are so similar) it would be very difficult to hit on an appropriate specific name, either in vernacular or scientific nomenclature.—"Aquatica" does not distinguish the species, in the present system, though in that of Willoughby it answered the purpose very well: he calls the bird "Merula aquatica, Water Ouzel." Nor is the term *Europea*, applied by Stephens, unobjectionable; being, as Mr. N. Wood candidly owns, rather vague. (Vide *Analyst*, vol. ii, p. 421). And here I cannot but acknowledge the very handsome manner in which that intelligent writer has mentioned my paper on Nomenclature, which appeared in vol. ii., p. 305, of "*The Analyst*," and which was, by some mistake of the printer, signed "N. F." Instead of adhering to his own name, after being convinced of its impropriety, as, I am sorry to find, several writers do, he at once—although the objection was slight—gave up his own name and adopted the improved one. This is the conduct of one in earnest in his search after truth. The same writer says (vol. ii, p. 239):—"I am extremely happy in being able to mention Temminck and Stephens amongst those writers on Ornithology who have attended to this important part of nomenclature. Even these have not always succeeded, but they have got the principle, and that is more than half way towards being right." I agree in thinking Temminck and Stephens, on the whole, good nomenclators, but both have erred in many instances, of which, by way of illustration, I will give examples. Temminck includes the Eagles, Buzzards, Harriers, Hawks, &c. in the genus *Falco*; but instead of applying one French generic name, (*Faucon*) as he has done in his genus *Silvia*, he gives no less than six! The two Kinglets he includes in the genus *Silvia*; but instead of applying the name *Becfin* (as through the rest of the genus) he calls them *Roitelet*—which would be the proper name in the system of Selby. The genus *Gallinula* he calls *Poule-d'eau*, instead of *Gallinule*, as Vieillot has very properly done. There are several more errors of this kind, but the nomenclature is generally correct, and, compared with that of Buf-

fon, it is perfection. There are, likewise, flaws in Stephens's nomenclature: for instance, the *Sylvia cinerea* is properly called White-throated Warbler, but his *Silvia Silviella* (*Ficedula garrula*, of the foregoing list) he calls Lesser White-throat, thus changing the generic name. The genus *Rotch* (*Mergulus*) he has called *Sea Dove*, and the genus *Daption* (*Daption*) he has called *Sea Pintado*. I must now conclude these remarks, entreating my readers to give the subject the consideration which I conceive it so justly merits.

S. D. W.

THE SINNER'S AGONY.

"A wounded spirit who can bear."—PSALMS.

Why should I fear to die?
Can the unquiet earth,
With its false hollow mirth,
Its sickening pleasures and dull load of care,
Cling to this weary heart,
That I should grieve to part
From such as these?—Ah! no, it is not there,—
Not there the thorn that rankles in my breast,
And will not give me rest.

Why should I fear to die?
Is it to leave behind
The beautiful, the kind,
Bright forms affection's golden chain uniteth;
To quit the tranquil home,
Beneath whose hallowed dome
Is centred all in which my soul delighteth?
Ah! no not this the pang that rends my breast,
And will not give me rest.

Why do I fear to die?
Shrinks back my soul with dread
From that cold narrow bed,
Man's long last home,—where silence ever broodeth,—
Where darkness over all
Extends her gloomy pall,
And but the worm its slimy form intrudeth?
Not this the dull despair,—the heavy woe,—
That brings my spirit low.

Must I not fear to die?
Evil and few have been
My days, in this world's scene,—
In pleasure's flowery path my steps have trod;
Too fondly then I deemed
This life was all it seemed,
And in the pride of youth forgot my God:
He leaves me now,—he will not hear my prayer,—
He leaves me to despair.

M.

REMARKS ON THE PRACTICABILITY OF NAVIGATING THE RIVER HUALLAGA,

WITH NOTES ON THE PRODUCTIONS, AND OF PART OF MAYNAS, PERU,

BY A. MATHEWS, A. L. S.,
NATURAL HISTORY COLLECTOR AT LIMA.*

ON leaving Lima, it was my intention to make some stay at each of the Pueblos† on the banks of the river Huallaga ; but was prevented, in consequence of having been detained in the Quebrada‡ of Chinchao longer than I expected : nevertheless, I saw sufficient during my journey from the point from which I started, or embarked, (Juana del Rio) to the port of Shipaja, to recommend this part of Peru to the especial notice and care of the Supreme Government.

The true character of the River Huallaga is, as yet, but imperfectly known ; and it is generally supposed, in Lima, that it might be navigated by steam vessels with facility. Though this is the general opinion, it has been formed without a true knowledge of the difficulties which a steam vessel would have to encounter, especially in the ascent.

From Juana del Rio to Uchiza there are but two malpasos§ of any importance : when the river is full they may be passed with ease ; but when the river is at its lowest, the angle or bend, in which the deep part is situated, is so sharp, and the current comes with so much force against the precipice of rocks, which are partly undermined, that a small vessel would have great difficulty in stemming the current. From thence to a short distance below Tocache, the river is broad, the current less strong, with many large islands ;

* The Editor is indebted to J. C. Loudon, Esq., for the following interesting communication.

† Small villages.

‡ Deep vallies, formed by the streams or torrents descending from the Cordilleras of the Andes, are all termed Quebradas. It is a better term than any we have ; our term, ravine, does not convey a sufficient idea of the size of these places.

§ Bad passes, or rapids.

and though in most parts of sufficient depth of water for any sized vessel, the course of the river is constantly changing, where the banks are low, from the great number of large trees that are continually falling on its banks, and shifting their position when an increase of the waters takes place. From below Tocache to Sion are a succession of malpasos, not less than eight, many of which, from the rapid descent of the river and its numerous and sudden turns, are dangerous: but it is below the Port of Valle that the principal impediment is situated, at a pass called Savaliyacu. The hills are here high on both sides, forming rocky precipices, and narrowing the river to about fifty yards. Several yards from the east bank of the river is a half-sunken large rock, against which the whole force of the river is precipitated, and from which it passes in an oblique direction to the opposite side. The fall is so great that it is evident to the naked eye. A vessel ascending this point, in the act of manœuvring to escape the rocks on either side, would be liable to be brought broadside to the stream, and consequently exposed to instant destruction. From this to Lupuna and Shipaja, the river is wide and of easy navigation.

The soil on the banks of the river is fertile, and the climate favourable. Uchiza, Tocache, Sion, Valle, and Lupuna are delightfully situated; but it is to be regretted that the present population is much less than that given by the Rev. P. F. Manuel Sobreviela, in the *Mer. Per.*, 9th October, for the year 1791. Having been now some time without the guidance or care of either missionary or curate, the natives are in a state of disorder and idleness; spending the greater part of their time in preparing masata and in drunkenness.

On landing at Shipaja I made direct for Tarapoto, by way of Juan Guerra, a distance of six to eight leagues of one level plain, covered with immense trees. During a stay of four weeks in Tarapoto, I had an opportunity of observing most of the productions and capabilities of the situation. From the P. F. Eusebio Arias* I

* This gentleman kindly presented me with a manuscript grammar and vocabulary of the language of Maynas; and a vocabulary of the Panes or Setivos, a nation or tribe of the river Neayali: these cannot fail of being both interesting and useful.

received the greatest kindness and hospitality, and also much valuable information, which a residence of twenty-eight years had enabled him to acquire.

Tarapoto and Cumbasa are situated in a large plain, with the river Mayo (or, as it is generally called, Mayobamba) on the south, and a range of high hills on the north, extending from the Hualaga to the westward of Lamas, where they form the north bank of the above river, and thus continue their course, with some slight variation, to the source of the river in the Cordilleras of Chachapoyas. In the immediate neighbourhood of Tarapoto and Cumbasa, the soil is sandy and partially covered with shrubs and small trees, with abundance of good pasture throughout the year. At short distances commence the montâna real,* in which are situated the chacrast† and labranzas,‡ which with little labour produce rich crops.

The principal productions are plantains, maize, yuccas, aracachas, rice, sugar, tobacco, cotton, frigoles, and mane; the fruits, pinâs sapote, caimeto, oranges, lemons, limes, paltas,‡ granadillas,|| tumbo,|| and cashew. The manufactures are cotton-thread, tucuyos, lonas, and hats. The natural productions of the woods are bees'-wax, myrtle-wax, balsam of copaiva, vanilla, acerte-de-Maria, caranâ, or leche caspi,§ copal, estorach, and sarsaparilla, besides various medicinal plants, which require only to be proved by experienced and practical men to become valuable additions to our *Materia Medica*; and also many plants whose leaves or roots yield valuable and rich dyes of various colours, and some of them permanent even without chemical aid.

Besides the above, the woods abound in red-deer, huanganas or javali,** rabbits, pangis,†† pavos,‡‡ managaracas,||| &c., not mentioning the numerous small species of the feathered tribe of the most beautiful colours; and the rivers abound with innumerable kinds of fish.

* The forests.

† Cultivated grounds.

‡ The Alligator Pear, *Laurus Persia*.

|| Two species of *Pasiflora*.

§ Caragna Leche caspi, Milk of the tree. The word caspi signifies tree or wood, in the language of the Incas.

** A species of Pecary.

†† A fine bird, nearly as large as a turkey, related to the Curasa.

‡‡ A small species of turkey.

||| About the size of the English Pheasant, but not so handsome.

The average height of the thermometer seldom exceeds (in the shade) 86° , and rarely lower than 80° ; and the climate is generally healthy, and free from those universal plagues of tropical climates, the sanchudas* and musquitos.

The city of Lamas, which is distant nearly six leagues from Tarapoto, is situated on an irregular hill, and scattered over a large surface. The thermometer indicates a lower temperature than that at Tarapoto. The continual light breezes which are felt, render it far more pleasant, and cattle thrive much better than in Tarapoto; being less subject to the ravages of the fly, (a species of *cæstres*) and *tabanus*, called by the natives *subyacuros*, which deposit their eggs beneath the skin and cause considerable wounds, from the effects of which the animal becomes lean and sickly. The chacras are situated, for the most part, at some distance from the city, and on the sides of the quabradas, and produce the same as at Tarapoto. On the tops and sides of the hills are large pajonales,† which produce abundance of pasture during the whole year. There is also a vein of quicksilver here, and several kinds of earth, which, with but little labour in preparing them, are used to paint the interior of the houses.

From Lamas to Mayobamba the road is a continued succession of ascent and descent, with considerable windings. On leaving Lamas, the descent is continued to the river at San Miguel, and from thence the ascent continues to Tabalosa. From Tabalosa the road winds some distance along the sides of the hills, and then ascends a high range which runs N. W. From the summit of one of these hills is a fine view, embracing the whole of the valley to the borders of the Huallaga, and the course of the Mayo: at a short distance farther on is the Patrero and Campana, the summits of the range, containing some leagues of open pajonales of excellent pasture, with Montaña at their base. From these heights there is also an extensive view of the valley towards Sapo-Soa; at their base runs the source of the River Sisa, which joins the Huallaga, but not as represented in the Map of the Pampa Sacramento, published by M. Chaumette-Des-Fosses, where it has been placed on the opposite

* Tipuli.

† Open spaces clear of wood.

side of the Huallaga. It is a pity that this situation, so well adapted for the establishment of a small pueblo for the breeding and care of cattle, should be neglected. From thence to Mayobamba the greater part of the road is unusually bad, and so soft that the mud is generally knee-deep; and but few tambos or ranchos,* to shelter the traveller during the night from the heavy rains so frequent in these parts.

The city of Mayobamba possesses one of the finest temperatures in Peru; the thermometer indicates but little change, and is somewhat lower than that of Tarapoto. The city itself is situated on an elevated plain, about a league long, and from a quarter to half a league in width, of a dry, sandy, loamy soil: from whatever direction you approach the city it is necessary to ascend. During the rainy season the water from the adjoining hills settles on the surrounding levels, and at times causes some slight tertianas, but they are not common. The river, which is a few quadras from the town, comes from the N. W. and W. N. W., and parallel with the range of hills on the north. From about three leagues below the town it is navigable for eight days† towards its source, and on its banks are situated the chacras and labrancas. The produce and manufactures here are the same as those of Tarapoto, with the exception of copava and wax, which are less abundant. On the borders of the river is abundance of sarsaparilla, and the palm which is used in the manufacture of hats. At a short distance there are mineral springs so strongly impregnated with sulphur that the leaves and branches of trees which fall on the margin, shortly become encrusted with pure sulphur. There is, also, a rich vein of salt situated only a few leagues from the city, in the range of hills which are on the north bank of the river. This range is a continuance of the range east of the river Huallaga, from Juana del Rio to the south of Chasuta, where it thence turns westward, and is an almost uninterrupted line of mineral salt. The first mines or works are situated between Uchiza and Tocache; and the rivers known by the names of Salinas fall from these hills, very much impregnated with salt.—

* Small huts, built for the convenience of travellers.

† About three leagues is the general distance per day in ascending against the current.

At Pilluana, where the hills close upon the river Huallaga, the salt is exposed to view in large veins generally mixed with red sandy earth; though there are some flakes or veins of white, and chrystallized salt running through the mass: the same occurs again near Chasuta. In the road from Lamas to Mayobamba many of the streams which fall from the hills are strongly impregnated with salt; and one of the largest is known by the name of Cache-gacu (Salt River). This mineral production is an article of some importance to the people of Maynas; it is taken to the rivers Pastazo and Napo, and, with the poisons for the Pucuna,* is exchanged for gold-dust.

The valley of Mayobamba is of considerable length and width, bounded on each side by hills running nearly W. and N. W. Between Mayobamba and Rioja are two large rivers from the S. W., which, during the rainy season, bring down an immense body of water from the Cordilleras, which separate this part of Maynas from Chachapoyas.

Rioja, formerly called Santa Toribio, is a large pueblo about eight leagues from Mayobamba by the road; in its neighbourhood is a large extent of rich pasture, or pajonales, abounding in red deer. The produce here is the same as Mayobamba.

But with all these advantages the people of Maynas complain of great poverty. Since the contribution has been taken off, the natives have become, if possible, still more idle. The climate is such that clothing is only a secondary consideration; if a few plantains and yuccas are sown, it is all that he requires, the Morite furnishes him with the rest; he has, therefore, no inducement to work. His house costs him nothing, and as long as he can procure Masata† or Huarapa,‡ which he manufactures without expense, he is in a

* A long tube, which the Indians use for shooting birds, &c., by blowing through it a small arrow tipped with poison, which they use with great precision.

† The Masata is prepared as follows: a quantity of roots of the Yuca are washed, peeled, and boiled, then pounded on a large wooden dish or trough, the person at work at the same time masticating his mouthful of the root, and squirting it among the mass. When all pounded, it is mixed with water and put into earthen pots; on the third day it begins to ferment, and is then intoxicating. When wanted for a journey, the mass is merely rolled up in plantain leaves, and a small quantity mixed with water in their mate or tutuma, the shell of calabash. When they wish to make use of it, the fibre and large pieces of the Yuca are squeezed out with the hand. The drink is thick and white like milk, and when slightly fermented has a subacid taste.

‡ The expressed juice of Sugar-cane boiled with water and fermented. Another drink, called Viente-quatro, (Twenty-four), which is made by mix-

continued state of drunkenness. The few people of caste, or possessors of Chacras, who are inclined or willing to advance in agriculture, are prevented by the bad customs which have been allowed to prevail. It is with the greatest difficulty that labourers can be procured, as the people say they are now free and are not obliged to work. The consequence is that, frequently, work is left undone, or the season is in part passed before the ground is prepared, or the crops sown. Even when labourers are procured they receive two reals, their meat or food, and a bottle of aguardiente* daily; which for the few hours' work they perform, is an enormous imposition and tax on the agriculturist. Bee's wax, in the rough state, is always at a dollar the pound, tucuyas at two reals the vara, and lonas at one real the vara: neither of which, after paying all expences of freight, &c. to Chachapoyas or Caxamarca, realises more than half. Even the hats which are sold at three and four dollars in Mayobamba, are sold for much less in Chachapoyas.

The few who venture with sarsaparilla, tucuyas, hats, &c., to Taba-tinga, fare but little better: though they get their own nominal value for their goods, it is in effects, and they are obliged to take in return spirits, (gin) earthenware, iron, copper, and printed goods, &c., of the most ordinary class, all mixed together, many of which remain on their hands for years. The sarsaparilla the Brazilian buys from them at six dollars the aroles of thirty-four pounds, which he sells again at eighteen or twenty dollars in Para.

The produce of Maynas cannot, at any period, be expected to pay by the way of Chachapoyas and Caxamarca to the coast, from the length and badness of the roads. It is only by the river Amazons, and with the assistance of steam vessels ascending to Yuminaguas, that this part can be expected to improve. When that time comes Maynas, whose population is rapidly increasing, will then be the first and richest province of Peru. Though other provinces may boast of their mines, she possesses an inexhaustible treasure in her soil and forests; and a cheap and expeditious mode of conveyance by her rivers, which can never be equalled by any of the provinces of the Cordillera.

ing the Huarapa and fermented Masata: this is very intoxicating, and at the same time very pernicious. It receives its name from being drinkable in twenty-four hours time.

* Common rum, from the juice of Sugar-cane.

APHORISMS ON THE FRONTAL SINUSES,

AND THE EXTENT OF

THEIR INTERFERENCE WITH PHRENOLOGICAL OBSERVATION.

NUMEROUS and diversified inductions confirm the following Aphorisms. This being certain, their *general* accuracy is asserted; and no one has a right to impugn these statements, who has not devoted much time, labour, and expense, to a repetition of the inquiry on which they are founded.

I. Like all bones of the same kind, that portion of the skull which includes the Frontal Sinuses varies in thickness. Such variation, however, is neither so great nor so manifold as to prevent our distinguishing the *general* law of its development.

II. When its organization has not been disturbed, the Frontal bone, immediately above the nose, is nearly *two* lines in thickness, by the *tenth* year of life; by the *fifteenth*, it is *two lines and a half*; by the *twentieth*, it is *three* lines almost; by the *fortieth*, it is about *three lines and a half*; and by the *fiftieth*, it varies between three and a half and *four* lines. And whether the bone retains its original cellular structure, or has become hollow, this is the *natural* process, and these are the *ordinary* degrees of its thickening, between childhood and the adult age.

III. Till late in life, the bone's hollowness does not enlarge the distance of its external surface from that of the healthy brain.— Sometimes, after the tenth year, the space between the cranial plates is greater when no cavity exists; at other times it is less, when a cavity has supervened. Sometimes, a bony crest appears on the superciliary arch: this crest occasionally contains cellular texture; but most commonly it is hollow. It can be distinguished by experienced observers; and, exclusively of this, the bone, whether hollow or solid, preserves the usual thickness.

IV. During the foetal and infantile states, the Frontal Cavities do not exist. After the *seventh* year, they begin to be perceptible, and continue to enlarge gradually till the latest stage of life. The

common gradation of their growth is determinate, and the exceptions to it are not more numerous or important than those exceptions which *prove* a general rule in any of the sciences or philosophy. By the *tenth* year, their horizontal diameter is scarcely *half* a line; by the *fifteenth* year, it seldom exceeds *one* line; by the *twentieth*, it is rarely *one* line and a *half*; by the *fortieth*, it approaches occasionally to *two* lines; and after the fiftieth year of man's life, it is about *two* lines and a *half* in extent.

V. The Frontal Cavities result from a *natural* process; but the causes of their formation, and its mode, remain among the desiderates of physiology. They depend apparently on simple absorption of the interosseous cellular texture; and with the progress of this absorption their dimensions increase. Not till life's decline does the internal plate of the bone recede inwards. It is quite improbable that the external table of the skull ever advances: were such a process certain, it would establish an anomaly from the regular order of organization.

VI. The Frontal Sinuses may be wide, and their depth, nevertheless, not more than was that of the bone's primitive cellular structure. Their horizontal diameter may be *one* line; and, at the same time, that of the frontal bone itself, naturally, not more than *two*. Wherefore, the childish practice of poking these broad but shallow holes, from underneath, with a bit of wire, can never reveal the true distance of the bone's external surface from the brain. Finally, here, the deepness of these cavities may be, and often is, augmented by disease; and they have this much to do with old age that their greatest enlargement and old age are concomitant.

VII. Phrenologists admit that the Frontal Sinuses interfere with those parts of the skull which indicate the relative proportions of the organs of some of the perceptive intellectual faculties. This is the course after which the growth of these cavities usually proceeds. First of all, organic absorption gradually removes the cellular texture from between the tables of the frontal bone where it covers the organ of *Individuality*. Next, this absorption extends to the region of *Size*; then to that of *Form*; and then, in mature age, to that of *Weight* and the lower angle of *Locality*. Rarely, indeed, does it pass these limits of length and breadth, except in declining life and disease.

Now these successive formations follow not an increasing dispartition of the bony plates themselves, but the removal only of their intermediate cellular structure: consequently, the bone's horizontal diameter or thickness receives no addition from this process of natural excavation. Since, therefore, the size of these cavities does not move the skull's external surface to a greater than its original distance from the brain, before the prime of life, it is manifest that, until this period at soonest, phrenological observation on the frontal regions may be conducted with all the accuracy admissible by a subject whereon vital action never ceases to operate. Hence, in fine, although difficulties occur in examining the forehead, they never supervene before the positive recession of the bone's two constituent plates from each other—not the *extinction of its diploë*—has given the bone itself a growing degenerate thickness. The Frontal Sinuses very seldom ascend *an inch* within the bone; and through the upper half of this space, their transverse diameter never exceeds the thickness of the bone's original cellular substance.

VIII. Such being the organization of the frontal bone *generally*, and such the *general* development of its central cavities, it is obvious that, *in the young and healthy head*, the distance of the bone's external surface from the corresponding peripheral surface of the brain, may be generally ascertained; and, consequently, that the existence and functions of the organs of *Individuality, Size, Form, Weight, and Locality*, can be discriminated till after the prime of life, by the phrenological process of deriving the elements of positive and negative evidence, from observation of the high and low development of parts. Be it, therefore, remembered that phrenologists have always and explicitly declared, that persons advanced in years, or suffering from cerebral disease, do not constitute subjects of *precise* observation,—that the observations adduced by phrenologists in support of their organic discriminations, have, in no one instance, been made on such subjects,—and that, moreover, they have as explicitly declared their readiness, not only to rest the demonstration of the frontal organs upon negative evidence, but even to admit a fundamental defect in their system, on being shown one single example of a young, healthy individual in whom a *low* development of the organs of *Individuality, Size, Form, Weight, and Locality*, is

accompanied with the manifestation of a *high* endowment of these intellectual faculties. Should it even, in fine, be conceded that the difficulties which after mature age, occur in examining the forehead were insurmountable, the fact would no more go to overturn the system of phrenological organology, than the insurmountable difficulties which still retain trisection of an angle, and quadrature of the circle, among the desiderates of science, go to demolish the certain principles of geometry.

J. K.

ON THE STUDY OF LATIN, MORE ESPECIALLY AS REGARDS THE MEDICAL PROFESSION.

A KNOWLEDGE of the ancient languages, especially of Latin, is generally supposed to be necessary for those who are to enter the medical profession.* For this notion we shall presently find that there is little or no foundation. The advocates of a "*sound* classical education," as it is erroneously termed, are daily decreasing; another generation is springing up, unshackled by the antiquated prejudices of their forefathers, and free to judge for themselves, and decide on the side of reason. Indeed, such is the altered state of public opinion, that it is now scarcely possible to open any book on education without finding a chapter dedicated to exposing the folly of the system which makes the dead languages the chief object of education, and the absurdity of calling a man learned for his knowledge of words, no matter how ignorant he may be of matters of far greater importance. *In the minds of such persons* the ancients excelled us in every particular. Orators! who have we now to be compared to Demosthenes?† Physicians! where is the Galen of

* A "*sound* classical education"—I should call it a very unsound education—is thought necessary for every *gentleman*; I shall, however, chiefly confine my remarks to a classical education as regards medical men.

† The task of Demosthenes was very easy, as he worked only upon the animal passions of a *nation of brutes*, as Johnson calls them.

modern times? Poets! who of the present puny race is to be compared to Homer or Virgil? Or who amongst our musicians would dare to compete with Orpheus? whose bewitching strains caused the very stones to move! As to the latter, there can be no doubt but that, were he now to rise from the dead, he would be surpassed by every common flute-player who earns a miserable pittance by practising his craft in the streets. But let us now proceed to investigate the merits of a "*sound* classical education" for the medical student.

The inaugural thesis, formerly required to be in Latin, is now written in English, and the *matter*, not the *language*, is attended to. As there could be no other object in making the students write their essays in a dead language than to obtain a test of their knowledge of that language, it may fairly be inferred that it is not now considered so necessary. It is, however, still supposed to be of great use to those who are intended for the medical profession. One reason alleged for ascribing to it this usefulness is, that these languages enable the student to read the works of the learned among the ancients. But the moderns began where the ancients left off; the first man who studied Galen knew as much of medicine as Galen himself; and, in fact, saying that a man must study Galen in order to acquire a knowledge of medicine, is tantamount to admitting that we know not so much of the subject as he did—a proposition absurd in the extreme, but one which the advocates of the dead languages force upon themselves by their senseless arguments. The use of reading these ancient authors, even when translated, is to me far from apparent; for we have their experience added to our own.—Why then go back for instruction to authors who, were they now to rise from their graves, would be glad to receive instructions from one possessed of what is now termed an ordinary knowledge of the science. But to waste the best part of our life in obtaining this now useless lumber, appears to me too absurd to be defended, except by those whose minds are warped by prejudice or blinded by interest.

Another supposed use of Latin is, that the prescriptions are to be written in that language. How often, however, it happens that Physicians have not had the "*advantage* of a *sound* classical educa-

tion," and *they* find no difficulty in writing their prescriptions. As well might it be supposed that the ancient languages are indispensable to the Naturalist, because the scientific names of animals and plants are in Latin. A man may be an excellent Naturalist—nay, he is more likely to be so—and well qualified to give new names to natural objects, without knowing a single word of Latin. So, in the same manner, Physicians must, of course, know all the medical terms which are in use; and what more does he want? The Latin of prescriptions—which, after all consist of little else but terms—is such as any one might write and any one understand: and, indeed, were not this the case, how would it be possible for apothecaries' boys to understand them? In some cases, however, where we may suppose the Physician has wished to show the effects of his "*sound* classical education," the wrong medicine has been administered, and the luckless patient poisoned, by this absurd practice of writing the prescriptions in a dead language. It appears to me that instead of cloaking the prescriptions in such a dark veil of mystery, they should be rendered as plain and intelligible as possible, especially when we consider the awful effects which may be—and not unfrequently are—produced by a misinterpretation of the Physician's prescription, and when, moreover, we consider the description of persons employed to decipher them.

Another argument frequently brought forward in favor of the classics is, that they are eminently useful as media for the correspondence of scientific men of different nations. But would it not be much easier, and far more useful, to learn the modern languages, as French, German, and Italian, and especially the two first?—French is better suited for science than almost any other language; and from its universality, and the facility with which it is acquired, it is preferable to every other for the useful and pleasant intercourse above alluded to. It may, however, be urged that Latin must be learned in order to facilitate the acquisition of the modern languages. The fallacy of this argument is so evident that I consider it quite unnecessary for me to offer any remarks on this subject. I may, however, just state that Franklin advised a method of proceeding diametrically opposed to this. He says that the pupil should begin with Italian, then go to French, Spanish, German, &c., and

lastly, when thus prepared, that he may, provided he has a turn for it, proceed to Latin and Greek. This would, in my opinion, be a sensible mode of going to work. One reason assigned why Latin is necessary for the Physician—that the consultations of Physicians are held in that language, is scarcely worth noticing. Molière has sufficiently ridiculed this practice, which is now, I believe, luckily for the poor patient, seldom or never adhered to. I will only remark that the consultations are held in another room from that in which the patient lies, and may, therefore, be in any language.

Having thus refuted each argument in particular which has been brought in favor of the study of the classics, I will proceed to offer a few general remarks on this “*most important branch of knowledge.*”

It has lately been proposed, by an able Physician, that there should be two classes or grades of Physicians—those of the one class, who are the medical attendants of the higher ranks, are to have a “*sound classical education,*” besides the knowledge of medicine and the collateral sciences; those of the other class, who are intended *only for the poor*, are to be excluded from the *benefits* of a knowledge of the ancient languages, and are to be conversant *only with Medicine, Surgery, Anatomy, and Chemistry*; and the modern languages and Botany, where an opportunity occurs. Only Medicine, Surgery, Anatomy, and Chemistry! If I were called upon to decide which class of practitioners I thought would be likely to succeed best in their profession—supposing them to be acquainted with French and German, or, at least, the former, which almost any one may acquire—I should, without hesitation, decide in favor of the latter; as they would be able to give undivided attention to their own science, and to those collateral sciences which it is perfectly indispensable for them to be acquainted with. To suppose that there is something in the nature of Latin which renders it essentially necessary to the student of medicine, is perfectly ridiculous—as well might you place briars and thorns in the path of the weary traveller making his way through a forest, and tell him that you were smoothing his road, as force the student of medicine to learn the dead languages in order to facilitate the acquirement of medicine. As long as this prejudice

continues to exist, the science of medicine can make no rapid progress, or, at all events, its progress will be greatly retarded. Surely the study of medicine is sufficiently difficult without adding any useless impediment to its acquisition. To suppose that rendering a man a "walking dictionary" can assist the acquirement of any science, is an opinion that no one who has impartially investigated the subject can possibly hold.

The days are, doubtless, fast approaching when what is now called a "*sound* classical education"—*rotten*, I should be inclined to say—will no longer be supposed to be indispensable for the Physician; and, in fact, we have already many signs of this. In the first place, medical books are much less frequently written in Latin than formerly, and neither lectures nor inaugural theses are any longer delivered or written in that language. It is, also, now extremely rare to see a work on Natural History in Latin, although, I am sorry to say, that, in Transactions of Natural History Societies, and in periodicals devoted to this delightful study, the scientific descriptions of animals and plants are generally in the Latin tongue—Latin it certainly is, but I would not vouch for the purity of the language. Much complaint has been made, by classical scholars, of the barbarous Latin used by Physicians and Naturalists; and students of these sciences have equal right to complain of the contents of so many useful and interesting books being sealed to them. I have lately seen, in the *Derby Mercury*, that Apothecaries' boys are now to have a "*sound* classical education" beaten into them.—Leave, then, to the Apothecary's boy the ungainly task of poring over the dusty records of by-gone ages, and let the Physician cultivate the far nobler and more useful studies of Science, Literature, and the Fine Arts, and the modern Languages; which last are valuable only as *media for obtaining* knowledge, and must not be confounded with knowledge itself. The Musician is, I believe, more free from the supposed necessity of learning Greek and Latin, than any other cultivator of art or science. It may, however, perhaps be urged that it is impossible to have "good taste," even in Music, without learning—or rather studying, for they are seldom learnt—the dead languages! Perhaps, also, some very *useful* remarks for

modern composers might be found in the ancient authors. Pity but some precious relic of "Airs and Canzonets, by Orpheus," could be dug up; the stones might then once more be set a leaping, and we might hear such music as the ancients heard. The compositions of Gibbons, Bach, Handel, and Mozart, would then sink into insignificance; nay, it is much to be doubted whether they would ever be thought of more! I must now, however, hasten to the conclusion of this article.

In perusing these remarks, the reader must not look to the signature, and exclaim "Oh! it is written by *nobody*," but must weigh every argument for himself, rejecting those which he considers, on mature consideration, to be erroneous. To suppose that only what is written by a well-known character is worth attending to, argues but a small development of the organ of causality in him who holds such an opinion: it is not the name of the writer, but the truth or falsity of his arguments, that should be considered. Seeing that I am a Phrenologist,—from one of my former papers in this Journal—and that I am against making Latin and Greek the most *important* part of education, it may be supposed I advocate that science because it is new (comparatively speaking), and object to the acquisition of the dead languages because it is old; I would ask those who are of this opinion to investigate impartially the merits of my arguments, and should any of them be found defective, I shall be most happy to answer such objections as may be brought against them, through the medium of *The Analyst*, whose pages would readily be opened, by its philosophic Editor, to all discussions on Science, Literature and the Fine Arts, provided they were perfectly free from acrimony and personal abuse,—which can only be resorted to when every other resource fails. In conclusion, I merely refer my readers, for further observations on this subject, to the *Phrenological Journal*,—an invaluable quarterly periodical—in many parts of which they will find this subject ably discussed, and to the works of Mr. Combe,* who, being himself a classical scholar, and engaged in one of the

* "System of Phrenology," "Elements of Phrenology," "The Constitution of Man," "Outlines of Phrenology," &c., &c.

learned professions, is well fitted to judge of the utility of the classics. See, also, Simpson on National Education, the "Bubbles from the Brunnens of Nassau," and Bulwer's "England and the English."

NEVILLE WOOD.

Foston Hall, Derbyshire,
Sept. 14, 1835.

[The following passages from the "*Popular Illustrations of Medicine*," by Dr. Shirley Palmer, accord so closely with the valuable observations of our correspondent, Mr. Wood, that we have been induced to transcribe them :—

"It may even be questioned whether the literary acquirements of early age are worth the sacrifice and the risk incurred in their pursuit. Many a weakly stripling has spent the brightest and most joyous years of a precarious existence in irksome drudgery upon the works of Homer and of Virgil, long ere his mind could comprehend the majesty of the Greek, or be smitten with the splendour and elegance of the Roman Poet. And what, after all, has he acquired that can compensate for the lost opportunity of more fully evolving his physical powers, and fortifying his constitution against the inroads of future disease? A knowledge of which, in riper age, a few months' application, under an enlightened system of instruction, would have given him a far more perfect possession; and in the attainment of which a matured intelligence would then have afforded the most exquisite gratification.

Still the young mind should not be suffered to run wild without culture or restriction. It must be employed; or, like the stagnant pond, it will generate weeds and impurity upon the surface. But the occupation should be such as will combine amusement and active exercise of the limbs with the acquisition of knowledge; and expand the germ of intellect without cramping, in their development, the animal organs. Such are the principles upon which the education of youth, and especially of the more highly intellectual and delicate, should be conducted. For this purpose, Natural History offers a field, as constantly accessible as boundless and delightful. Trained

to examine, and to discriminate with accuracy, the various productions of the world around, the mind possesses a source of occupation and of light, of which no ordinary vicissitude can afterwards bereave it. The study of nature, indeed, is not less salutary in its influence, than unchanging and inexhaustible in the recreation which it affords. It purifies the mind from the dross of sensuality, and raises it above the degradation of low and selfish pleasures.—It calls forth a spirit of observation, and exercises a discipline, which may become powerful instruments in facilitating the acquisitions of future years. It gives zest to the enjoyments of prosperity and meridian life, and solace and ornament to the season of adverse fortune and of decay : and, more than all, will, when profoundly contemplated, inspire far deeper convictions of the Omnipotence of the Deity, and the wonders of the glorious creation, than ever resulted from efforts of human eloquence the most fervid or sublime. And the mind, having attained its full maturity of development and power, will seize, with equal energy and success, all the various branches of literature and science which may be requisite to satiate the intellectual voracity, or essential to a vigorous prosecution of the destined path in future life.”]

SONNET.

Is thy brain giddy with the jarring noise
 Of life's rude intercourse? Have crowded halls
 Fevered thy blood, perturbed the equipoise
 Of healthful spirits? Come, where Nature calls,
 Come, where through fragrant limes the sunlight falls,
 Playing with shadows by the quick leaves thrown,
 Where the loud thrush scatters sweet madrigals
 To cheer his nest-mate, and an under-tone
 Of bees, the blossoms haunting, ministers sleep,
 Or waking dreams,—the soul's serenest calm:—
 Or there with holy books thy vigils keep;
 Or steep thy sense in Poetry's rich balm,
 The gracious truths of Wordsworth's moral theme,
 Or Spenser's faery page, or Shakspeare's summer dream.

E. S.

A COMPARISON BETWEEN THE CLIMATES OF GREAT MALVERN AND LONDON.

IN the second volume of "*The Analyst*," p. 215, is the commencement of a paper on "A COMPARISON BETWEEN THE CLIMATES OF GREAT MALVERN AND LONDON;" this paper includes the several details of the temperature, atmospheric pressure, dew point, wind, rain, &c., for each month during the summer and autumnal quarters of the year 1834. The present communication embraces the winter and spring of 1834 and 35, with a comparative summary of the important meteorological phenomena for the year,—and is concluded with such general remarks, as the comparison has suggested. It will be seen, by referring to the former paper in "*The Analyst*," that every attention has been paid to the excellence of the instruments by which it has been carried on, and every care has been taken to insure accuracy in the result.

TEMPERATURE.

In the month of December, 1834, the first month of the winter quarter, the mean temperature of Malvern was 1° higher than the mean temperature of London. The mean maximum at Malvern was 45.8° , the mean minimum 39.6° ; in London the mean maximum 45.6° , the mean minimum 38.1° . The maximum height of the thermometer during the month was, in London, 54° , in Malvern, 55° ; the minimum in London, 29.2° ; in Malvern, 32 . The greatest range during the month in London, 24.8° , at Malvern, 23 .

In January, (1835), the second month of the winter quarter, the mean temperature at Malvern was *half a degree* lower than the mean temperature in London. The mean maximum at Malvern was 42.1° , the mean minimum, 35.1° ; the mean maximum in London, 43.1° , the mean minimum, 35.3° . In London the greatest height of the thermometer was 49.7° , in Malvern, 52.5° ; the minimum in London, 24.9° ; in Malvern, 23° . The range of the thermometer in London, during the month, 24.8° , in Malvern, 29.5° .

In February, the last month of the winter quarter, the mean temperature at Malvern was $\frac{3}{10}$ of a degree *higher* than the mean temperature in London. The mean maximum at Malvern was 48° , the mean minimum, 37.4° ; in London the mean maximum, 47.7° , the mean minimum, 37.1° . The greatest height of the thermometer during the month, in London was 53.2° , in Malvern, 52.5° ; the minimum in London, 27.9° , in Malvern, 28.5° . The maximum range in the former place, 25.3° , in the latter, 24° .

For the winter quarter—

	Mean temperature.	Mean maximum range.
London.....	41.1°	24.9°
Malvern	41.3°	25.5°

From the foregoing statement we perceive that the generally clouded state of the atmosphere, and the less altitude of the sun during the winter, prevent that accumulation of temperature which occurs in London, during the summer quarter especially, from the copious and varied reflections of heat from the sun's rays acting upon the pavements, buildings, &c. of a large city; while, doubtless, the numerous gas-lights, and the columns of heated air issuing from a vast accumulation of chimnies during the night, arrest the depression of temperature which would otherwise ensue from radiation. The former circumstance tends to equalise the condition of the two places during the day; and we find that, for the quarter under consideration, the mean maximum for each month in either place varies but little; the latter observation would tend to increase the mean minimum, and also the absolute minimum for each month—i. e. to prevent the depression of the thermometer during the night in London. Nevertheless, we see that, for the winter quarter, the mean temperature of Malvern is as high as the mean temperature of London.

In March, the first month of the spring quarter, the mean temperature at Malvern was $\frac{3}{10}$ of a degree *lower* than the mean temperature in London. The mean maximum at Malvern was 47.9° , the mean minimum, 37° ; in London the mean maximum was 48.3° , the mean minimum, 37.2° .

The maximum height of the thermometer during the month in London, 54.2° , in Malvern, 58° ; the minimum in London, 32.7° , in Malvern, 31° . The greatest range in London, 21.5° , in Malvern, 27° .

In April, the mean temperature at Malvern was 1.4° lower than the mean temperature in London. The mean maximum at Malvern was 52.9° , the mean minimum, 41.6° ; in London the mean maximum 55.8° , the mean minimum, 42.4° . The maximum of the thermometer during the month, in London, 66.2° , the minimum, 30° ; the maximum in Malvern, 62° , the minimum, 28° . The greatest range, in London, 36.2° ; in Malvern 34° .

In May, the mean temperature at Malvern was 4° lower than the mean temperature in London. The mean maximum at Malvern was 58.2° , the mean minimum 45° ; in London, the mean maximum, 62.5° , the mean minimum, 48° . The maximum of the thermometer during the month, in London, was 72.8° , the minimum, 41.7° , the maximum in Malvern was 66° , and the minimum 37° . The greatest range, in London, 31° ; in Malvern, 29° .

Hence we have for the spring quarter—

	Mean temperature.	Mean maximum range.
London.....	49°	22.5°
Malvern	47°	30°

In the month of April, the effect of the sun's rays begin sensibly to operate,—the mean temperature in London being 1.4° higher than in Malvern, and this continues to increase throughout the month of May.

ATMOSPHERIC PRESSURE.

In December, the maximum of the barometer in London, (corrected as before) was 30.576, the minimum 29.215; the mean 30.265, and the range 1.361. In Malvern, the maximum 30.043, the minimum 28.611; the mean 29.700, and the range 1.432.

In January, the maximum in London, 30.759, the minimum 29.031; the mean 30.048, and the range 1.728. In Malvern, the maximum was 30.158, the minimum 28.359; the mean 29.445, and the range 1.799.

In February, the last month of the winter quarter, the maximum of the barometer in London was 30.417, the minimum 29.178; the mean 29.797, and the range 1.239. In Malvern, the maximum 29.876, the minimum 28.526; the mean 29.159, and the range 1.350.

For the winter quarter—

	Mean Height.	Mean Range.
London.....	30.036.....	1.442
Malvern.....	29.435.....	1.527

Having paid much attention to the barometer, both in Malvern and at London, we may remark that on the MORNING of the 26th of January both instruments had fallen to the minimum of the month; but the barometer at Malvern was, for about two or three hours, unusually depressed, being $\frac{1}{10}$ in. below that in London, *very heavy rain* falling at the time: whilst at the same hours in London the weather was *overcast, light rain, and light clouds*. In the AFTERNOON, the barometer at Malvern had risen .250 in., and that in London .106: thus both, again, resuming their very nearly coincident indications. We may, also, observe that the dew-point, at the same period, was 4° higher in Malvern than in London: temperature the same.

In March, the first month of the spring quarter, the maximum of the barometer in London was 30.513, the minimum 28.797; and the mean 29.903, and the range 1.716. In Malvern, the maximum was 29.913, the minimum 28.192; the mean 29.274, and the range 1.721.

In April, the maximum of the barometer in London was 30.429, the minimum 29.475; the mean 30.077, and the greatest range for the month, .954. In Malvern, the maximum 29.873, the minimum 28.965; the mean 29.526, and the range .908.

In May, the last month of the spring quarter, the maxi-

imum of the barometer in London was 30.123, the minimum 29.427; the mean 29.813, and the range .696. In Malvern, the maximum was 29.590, the minimum 28.850; the mean 29.243, and the range .740.

Hence, for the spring quarter—

	Mean Height.	Mean Range.
London.....	29.931.....	1.122
Malvern.....	29.348.....	1.123

In March, (on the 7th) the minimum occurred at Malvern at 9 a. m.; in London, not until 3 p. m. At the former place were *very heavy showers*, with *light wind*; at the latter, *lightly overcast*, *brisk wind*. On the morning of the 8th they both again coincided. From this it would appear that the great atmospheric oscillations sometimes take five or six hours in their movement across the space dividing Malvern and London.

DEW POINT.

In December, the maximum dew-point was, in London, 53°, in Malvern also 53°; the minimum in London 33°, in Malvern, 32°; the mean in London 41.3, in Malvern 40°.

In January, the maximum in London 48°, in Malvern 48.5; the minimum in London 17°, in Malvern 21°; the mean in the former place 35.6°, in the latter 36.1°.

In February, the maximum dew-point in London was 45°, in Malvern 49°; the minimum in London 22°, in Malvern 30°; the mean in London 36.3°, in Malvern 38.6°.

For the winter quarter—

	Mean Dew-Point.
London.....	37.7
Malvern.....	38.2

	London.	Malvern.
Mean elasticity of the vapour in the air (for the season) }0.260.....0.264
Mean weight of vapour (in grains) in a cubic foot of air (for the season) }2.975.....3.047

In March, the first month of the spring quarter, the maxi-

imum dew-point in London was 42° , in Malvern 50° ; the minimum in London 29° , in Malvern 30° ; the mean in London 36.5° , in Malvern 38.6° .

In April, the maximum dew-point in London was 51° , in Malvern 54° ; the minimum in London 26° , in Malvern 25° ; the mean in London 41.3° , in Malvern 41.5 .

In May, the maximum Dew-point in London was 56° , in Malvern 54 ; the minimum in London 40 , in Malvern 39° ; the mean in the former place 48.3° , in the latter 46.2° .

For the spring quarter—

	Mean Dew-Point.		
London.....	42°		
Malvern.....	42.1°		
	London. Malvern.		
Mean elasticity of the vapour in the air (for the season) }0.304.....0.306		
Mean weight of vapour (in grains) in a cubic foot of air (for the season) }3.452.....3.466		

WIND.*

	DECEMBER.		JANUARY.		FEBRUARY.	
	Vapour.	Dry.	Vapour.	Dry.	Vapour.	Dry.
London.....	17.....	14.....	20.....	11.....	25.....	3.....
Malvern.....	16.....	15.....	20.....	11.....	23.....	12.....

TOTAL FOR THE WINTER.

	Vapour.	Dry.
London.....	62.....	28.....
Malvern.....	59.....	31.....

	MARCH.		APRIL.		MAY.	
	Vapour.	Dry.	Vapour.	Dry.	Vapour.	Dry.
London.....	19.....	12.....	14.....	16.....	19.....	12.....
Malvern.....	16.....	15.....	13.....	17.....	18.....	13.....

TOTAL FOR THE SPRING.

	Vapour.	Dry.
London.....	52.....	40.....
Malvern.....	47.....	45.....

* These, and the tables of the wind previously detailed, we offer only as approximations: for, with westerly winds especially, the difficulty of determining, at Malvern, whether it is a little to the north or south of the due west point is almost insurmountable. In the former case, according to the sub-division before indicated (p. 223, vol. ii, of "*The Analyst*,") the current would be classed in the Dry, in the latter, in the Vapour column.

**MEAN TEMPERATURE AND MEAN DEW POINT
OF N. E. AND S. W. WINDS, AT LONDON AND MALVERN, FOR THE WINTER
AND SPRING.**

WINTER.	Wind.	Mean Temp. at 9 a. m.	Mean Dew-Point. at 9 a. m.
London	N. E.	35.6	29.6
	S. W.	46.	42.9
Malvern	N. E.	35.	28.7
	S. W.	45.6	44.
SPRING.	Wind.	Mean Temp.	Mean Dew-Point.
London	N. E.	48.	40°
	S. W.	50.4	43.5
Malvern	N. E.	46.1	37.1
	S. W.	50.9	46.3

NUMBER OF DAYS ON WHICH RAIN OR SNOW FELL.

1834—35.	December.	January.	February.	Total for the Winter.
London	8	13	13	34
Malvern	7	9	12	28
1835.	March.	April.	May.	Total for the Spring.
London	12	12	15	39
Malvern	10	9	16	35

In attempting, therefore, to offer any sufficient reason for the greater salubrity of one place compared with another,—as Malvern with London, or with any other locality,—we are constrained to look to different circumstances than those usually embraced in meteorological inquiries: neither the thermometer, barometer, nor hygrometer, furnishing us with materials sufficient for the purpose.

An investigation into *the nature and consistence of the soil,—the conditions of its surface,—the circumstances attendant upon the exhalations arising therefrom,—and above all, the phenomena resulting from their precipitation,*—conjoined with careful observations on the daily temperature, pressure, motion, and vapour of the air,—will be more likely to elucidate the object of such an inquiry than the greatest attention bestowed on the latter mentioned points only.

In a district, therefore, where it is purposed to institute meteorological observations, it will be necessary to state whether the general nature of the soil is clayey or sandy,—and this not only of the immediate spot where they may be carried on, but for some miles

round—whether the sub-soil is rocky, chalky, clay, or otherwise,—whether the contiguous localities are well or ill drained,—and whether, with reference to the country around, it lies rather high or low. The conditions of the surface of the district, and its neighbourhood, should also be stated; whether extensive tracts of meadow land, or arable land, prevail,—much or little wood, water, &c. With such additional information, meteorological observations would be rendered trebly valuable.

The atmosphere often varies very much in transparency. Sometimes it is loaded with a light haze or mist, at others it is perfectly clear, so that distant objects appear nearer; sometimes the haze or mist is very great, and yet the air, as shewn by the hygrometer, is very dry; indeed, with our driest winds (N. E.), the haze is generally most prevalent: it must, therefore, at such times, be very different from any form of vapour. A hazy state of the atmosphere, such as that just noticed, is called, by the common people, *a blight*. Whether it exerts any such effect upon the human frame, is a question to be determined; at all events, it should be clearly distinguished, by the meteorologist, from that thick and muddy appearance which the air often assumes when its temperature is no greater than the dew point, and which arises from the commencing precipitation of vapour.

The more obvious effects resulting from the precipitation of vapour, diffused through the air by the heat of the sun, are rain, fogs, and dew.

It is well known that aqueous vapour facilitates the vaporising force of many substances, becoming, as it were, a carrying agent.—A theory of meteoric stones has been founded on the supposition that the earthy and metallic matter found in them had been raised in vapour from similar matter upon the earth's surface, which, though extremely attenuated and dilute at first, gradually accumulated, and, by some natural operation in the upper regions of the atmosphere, became condensed, forming those extraordinary masses of matter which occasionally fall to us from above. However this may be, we cannot doubt that many noxious exhalations are carried up by the aqueous vapours arising from the ground during the day, but which are, in their ascent, so extremely attenuated and dilute

as not to affect, in any way, the senses or functions of the human frame. Whether these noxious exhalations always descend when the aqueous vapour which bears them upward is condensed, or whether, as in the just-mentioned theory of *aërolites*, they remain in the upper regions some indefinite period, and gradually, by some natural operation in the higher regions, accumulate, become condensed, and then again descend, (not to beat our brains out, as the *aërolite* undoubtedly would, were we to encounter it, but sometimes to fall with a hardly less fearful, though invisible, blow), is a question not easy, perhaps, to determine. However difficult it may be to admit this theory in the instance of meteoric stones, it is far from being so with respect to malarious exhalations. The experience we have of them, in the production of various epidemical diseases incident to man, renders it highly probable that they do very often descend in a noxious form, when the aqueous vapour with which they are associated is condensed; and we can believe that they may sometimes remain and accumulate until some unknown operation in the higher regions favours their descent—not, indeed, in a solid and visible state, but in a sufficiently concentrated and *invisibly cloud-like* form as to sweep successively over various parts of the earth's surface, occasioning the appearance of violent epidemic diseases.

We by no means intend to be understood as implying that the evaporation taking place from every part of the surface of our globe necessarily disentangles noxious exhalations from their innocent repose; but, only, that where the surface does contain any materials for their formation, there the aqueous vapour promotes their disengagement from the ground—is the agent through whose means they escape—and associated with which they rise into the higher regions. It must, therefore, be more especially important to consider as closely as possible, the various forms and changes to which this, the *more tangible material*, (if we may use the expression), is subject.

It is with these views that the **TERRESTRIAL RADIATION** of Caloric,—a process which, with a still and clear atmosphere, speedily reduces, at night, the temperature of various parts of the earth's surface and the superincumbent air,—becomes a highly important object for consideration. Radiation is much modified by situation,

and the nature of the surface exposed: all low, damp places—grass and meadow-land—promote it in a peculiar degree; and the resulting visible forms of vapour, therefore, peculiarly affect such localities, which are really colder than more elevated places—light misty fogs, producing a sensation of chilliness, hang upon them at night and early in the morning, and all the noxious influence of malaria is concentrated there.

The fogs which form at night over valleys and low situations, and heavy dew, are therefore objects which the meteorologist should not fail to notice; for they are caused by the precipitation of aqueous vapour: and it is more than probable, if this vapour has been the carrying agent to any malaria, that its development, in a deleterious form, at the same period commences.

The aqueous vapour always permeating the permanent elastic atmosphere, possesses the same mechanical properties as it would exhibit in a separate state; the two fluids exercise only a certain degree of opposition to each others motion. Vapour is constantly tending towards the point where the elasticity is least, and its particles will very often be permeating the interstices of the permanently elastic fluid, in a direction opposed to the wind. If the flow of vapour is slow and steady, this motion, in totally opposite directions, may continue; if, on the other hand, in places not far removed from each other, the temperature of the dew point, or, in other words, the elasticity of the vapour, is very different, then its sudden rush will carry the permanently elastic fluid with it, and the wind will blow in the direction where the dew point, or the elasticity is least. Thus, during hot and very dry weather, when the air is nearly calm, dark, heavy clouds sometimes form, and rain descends in torrents; immediately the wind springs up—for the elasticity of the vapour evolved from the contact of the rain with the dry and heated ground is much greater than that in the neighbouring higher regions—and it rushes rapidly towards them, carrying with it the permanently elastic fluid: so that the wind blows *from* the point where the rain has fallen. But these are only very limited phenomena—thunder-storms, and the direction they impress upon the motions of the air, being very partial. What we wished to remark upon, was, that a current of vapour and possibly, also, a

current of malaria, may sometimes be moving in a direction different from that in which the wind may happen to be blowing.

The following is a summary of the results of the foregoing comparison: whether they are applicable to a series of years must be determined by a more extensive set of observations. We have little doubt of their correctness, not only for the year which has passed in review, but generally.

TEMPERATURE.

- 1.—During the summer the mean temperature of London is about 5° higher than at Malvern; an effect attributable partly to the greater power and influence of the sun's rays among crowded buildings and paved streets than in the open country, and to the elevation of the latter place.
- 2.—In autumn the mean temperature of London is $2\frac{1}{2}$ higher than at Malvern;—attributable to the causes mentioned in 1.
- 3.—During the winter months the mean temperature of London and Malvern varies only $\frac{2}{10}$ of a degree, and the difference in the mean range of the thermometer during the season is only about $\frac{1}{2}$ a degree. The sun's rays are so feeble at this season, and the maximum of the thermometer being almost invariably due to clouds or warm vapours, the temperature becomes more equalized.
- 4.—In spring the mean temperature of London is 2° higher than at Malvern; the difference commencing in the month of April, when the power of the sun's rays is becoming developed, as stated in 1.

MEAN TEMPERATURE OF THE YEAR,

AS ASCERTAINED IN THE FOREGOING COMPARISON.

London.....	52°
Great Malvern.....	49.6

The mean temperature of London, derived from observations continued for three successive years, by Mr. Daniell, and embracing the daily maxima and minima, is 49.5.

The higher mean denoted in the above result, arises probably from the mildness of the winter of 1834 and 35. Humboldt reckons the mean temperature of winter in London at 39.6° , whereas, from the foregoing data, it was 41° . Daniell makes it only 38° .

I have, on three several occasions, tried the temperature of a very fine, deep, and copious spring in the village of Great Malvern, and with the following results. In the first, temp. of the air 30° ; thermometer, immersed to the bottom of the spring, 50° . In the second, temp. of the air 56° , of the spring 50.5° . In the third trial, during very hot and dry weather, the temperature of the air was 75° , and the water 52° .*

ATMOSPHERIC PRESSURE.

1.—The fluctuations of the barometer at London and Great Malvern are very nearly simultaneous, and the daily range is, also, very nearly the same.

2.—The mean range for the seasons was—

In London.	In Malvern.
Summer..... $.687$ in.	Summer..... $.727$ in.
Autumn..... 1.255 in.	Autumn..... 1.242 in.
Winter..... 1.442 in.	Winter..... 1.527 in.
Spring..... 1.122 in.	Spring..... 1.123 in.

* The temperature due to any given elevation may be found as follows.—Reckoning the density of the air at the surface of a sphere as unit, the difference between the density of any given altitude and its reciprocal being multiplied by 45, will express the mean diminution of temperature in degrees of Fahrenheit's scale. Now the difference of density of the air at Malvern and London is $.574$ in. nearly, as shewn by the barometer.

Therefore

$$30,000 : 29,426 :: 1.000 : .980$$

which is the density of the air of Malvern, the density at London being 1.

Therefore

$$.980 : 1.000 :: 1.000 : 1.020 \text{ and} \\ 1.020 - .980 = .040 \times 45 = 1.8^{\circ}$$

the diminution of temperature due to the elevation of Malvern. It has just been stated that Mr. Daniell makes the mean temperature of London, according to his observations, 49.5 : and this agrees to the decimal place with Mr. Howard's estimate. Humboldt states the mean temperature of London at 50.4 ; so that 52° is, doubtless, rather high.

Now, considering the mean temperature of Malvern as 49.6 , and adding to it 1.8° the diminution due to elevation, the result is 51.4° . We conclude, therefore, that there are no peculiar causes tending to depress the thermometer in that locality.

THE MEAN HEIGHT AND MEAN RANGE OF THE BAROMETER FOR THE YEAR.

	Mean height.	Mean range.
London.....	29.954.....	1.127
Malvern.....	29.362.....	1.155

Mr. Daniell, from an average of three years observations, makes the mean height of the barometer in London 29.881. The mean of *twenty years*, deduced by Mr. Howard, is 29.865.

In the second volume of "*The Analyst*," p. 218, it is stated that, in consequence of the elevation of Great Malvern, it is necessary to add about .570 in. to the barometrical heights observed there. If we do this to the mean annual height just stated, it will appear that the result deduced by the foregoing comparison, does not vary much from that of Mr. Daniell, nor from Howard's.

DEW POINT.

- 1.—The mean dew point in London during the *summer*, is about $2\frac{1}{3}^{\circ}$ higher than the mean dew point, during the same season, at Malvern.
- 2.—The same observation applies to the *autumnal quarter*:—an effect, doubtless, owing to the elevation of the latter locality, and to its distance from any large expanse of water.
- 3.—During the *winter* months the mean dew point is $\frac{1}{2}$ a degree higher in Malvern than in London.
- 4.—In *spring* the mean dew point is the same in both places.

MEAN DEW POINT FOR THE YEAR,

AT 9 A. M.

London.....	46.4
Malvern.....	45.2

From a mean of the daily maxima and minima, Mr. Daniell finds the mean annual dew point at London 44.5° . It will be borne in mind that the annual mean just stated in this communication, is derived from daily observations at 9 a. m.

WIND.

- 1.—N. E. and S. W. winds are each, during summer, about 4° higher in temperature at London, than in Malvern. The reasons for this are probably included in obs. for temp. 1.

During the same period the mean dew point with N. E. winds is 2° higher in London than in Malvern, and 1° higher with S. W.

- 2.—In autumn, the mean temperature of S. W. winds is the same in both places; but N. E. winds are 2° colder in Malvern.

At this season, with N. E. winds, the mean dew point is $2\frac{1}{2}^{\circ}$ higher in London; but with S. W. breezes there is hardly any difference.

- 3.—During winter, the mean temperature of S. W. winds is also very nearly the same in both places. N. E. winds are only about half a degree warmer in London.

During this season, the mean dew-point with N. E. winds is 1° lower at Malvern; but with S. W. winds it is 1° higher than in London.

- 4.—In spring, the mean temperature of S. W. winds is about half a degree higher in Malvern than in London; on the other hand, N. E. winds have a mean temperature $2\frac{1}{2}$ higher in London than in Malvern.

At this season, the mean dew-point with N. E. winds is 3° higher in London than at Malvern; whereas, with S. W. winds, the mean dew-point is 3° higher in Malvern than in London.

If we divide the WINDS into the two great currents before stated, —vapour and dry,—the following is the result for the year:—

	Vapour Winds.	Dry Winds.
London.....	220.....	145.....
Malvern	219.....	146.....

RAIN.

Total number of days on which RAIN or SNOW fell in the year,—

London.....	129
Malvern.....	131

MALVERN has long been celebrated as a remarkably healthy spot : and it is true that many persons experience a very great improvement in their health when sojourning in it.

That its salubrity does not depend upon any of those meteorological phenomena embraced in the foregoing comparison must be sufficiently obvious, when we find so little difference in them at the two places, Malvern and London.

The greatest variation in the maximum of the thermometer at the two places was during the month of June, when the difference was $10.^{\circ}$; in the minimum the greatest difference was in September, $6.^{\circ}$

In the maximum dew-point, the greatest difference was $7.^{\circ}$, and in the minimum $11.^{\circ}$

Now, in the same place, the variations in the maximum temperature and dew-point are sometimes much greater in a comparison of *two successive days*,—amounting to from 10, 15, or even so much as 20 degrees in the former, and 10, 15, or 17 degrees in the latter ; so that, throughout the year, there is not any thing like so great a difference, at any period, in the temperature either of the air or vapour, between London and Malvern, as there is sometimes at either place between one day and another.

Nor do the other phenomena—atmospheric pressure, wind, or rain—offer any materials to account for differences in the salubrity of these or other moderately distant places.

In concluding this communication, we would say a few words upon the best method of keeping a useful Meteorological Register, and upon the instruments used for the purpose. To persons actively engaged in the duties of a business or profession, and who can be supposed to devote but little time to these pursuits, the following is the mode we would recommend: at *nine o'clock* a. m., a little before or a little after, the first observation for the day is to be made, and noted in any common quarto book kept for the purpose, in the following manner—

Date.	Barom.	Therm.	Hygr.	Time.	Wind.	Weather.
1835	29.655					Fine.
July 25.	68	65	58	9, a. m.	So.	Clouds
		55 Night, minim., Fine				
	29.600	70 maxm. Fine.				
	69	60	—	11, p. m.	S. W.	Fine.
					Light.	Stars.

At the same period, 9 a.m., the minimum of the preceding night, (by a self-registering minimum thermometer) is noted and put down; also the temperature of the dew-point, ascertained by Daniell's hygrometer. This does not take more than five minutes. Again, at eleven p. m., or just before going to bed, the observation is repeated; at this time noting the maximum (by a self-registering maximum thermometer) of the preceding day.

At each observation, the degree at which a thermometer (which should always hang close to the barometer) stands must be recorded and placed just below the barometric height, as shewn above, so that the correction for temperature may at any time be made.—Miscellaneous remarks can be *scribbled* down at the same time.—In this way, all things necessary for the purposes of any comparison are recorded, and may be made available at any future period of leisure. At the evening observation, the dew-point is not essential, and we have generally omitted it; for the ascertaining it, is a little experiment not readily performed by candle-light.

The Meteorological Table of the Royal Society is now published monthly in the Athenæum; and a register kept in the way recommended above, would enable any person to institute, with the greatest correctness—by the assistance of *Daniell's Meteorological Essays*—a comparison on the following daily particulars: Barometer, thermometer, and hygrometer at 9 a. m.; the height of the former by aid of the temperature placed below the height at which it stands, can be reduced to 32.° The maximum and minimum of the 24 hours can also be compared, together with the state of the wind and weather.

By devoting an hour of leisure to the purpose, the mean results for each month may be deduced in the usual manner, and all necessary correction duly estimated and applied.

With respect to the instruments which should be employed—

The Barometers commonly met with are by no means applicable to observations pretending to any accuracy. In the shops of the best manufacturers and opticians no two barometers agree: the height of the mercury is never actually measured in them—they are graduated one from another, and their errors thus unavoidably perpetuated. Few of them have any adjustment for the change of

level of the mercury in the cistern ; no neutral point is marked upon them, nor is the diameter of the bore of the tube ascertained ; and in some the capacity of the cisterns is perpetually changing from the stretching of a leathern bag.

We have endeavoured, as far as possible, to obviate these difficulties in the following manner—

1st. *Procure one or two of the best barometer tubes, and a sufficiency of clean mercury* ; take care that the interior of the tube is quite clean and dry ; heat it gradually before the fire ;—strain the mercury through a fine clean and dry silk handkerchief, and then heat it quite hot, or what is better, just allow it to boil ; when cool enough, strain it again through the silk handkerchief into a dry warm 2oz. glass apothecary's measure : 2ndly, then *fill the warm dry tube with it* ; whatever air-bubbles are seen, may be easily removed by passing the largest up and down the tube.—Again, 3rdly, *fill the tube quite full, and placing the finger firmly over the bore, plunge it into a cup of clean warm mercury* ; on removing the finger, the mercury falls a certain distance from the top. Before taking the tube out of the mercury, place the end of the finger again firmly over the bore, and then remove it. The space above the mercury is now occupied by very rarefied air, and by passing this three or four times very carefully up and down, keeping the finger close on the open end, all the air sticking in any part will be removed. Then allow the mercury (the finger being still upon the open end of the tube) to run slowly down to the closed end, taking care that no air-specks are any where visible ; then remove the finger, fill the tube quite full, and repeat the operation twice or thrice. Lastly, carefully fill the tube, and remove by a very slender piece of whalebone or strip of quill every speck of air that appears at the junction of the two portions of mercury, or elsewhere, above it. Again fill the tube quite full, and seal it securely with sealing-wax—placing a piece of gummed paper over the sealing-wax.

Now take a quire of long, smooth, clean, white paper, that has been exposed some little time to the air,—in order that it may not contract by drying—and, drawing a pencil line along it, measure, very carefully, 14 inches, which, by a pair of compasses, may be

taken from the scale you intend to apply to your barometer,—measure it two or three times, to be perfectly correct ; put a minute speck of ink at each end of the measured distance ; with a fine file make a mark upon the tube, about an inch or an inch and a half from the end now closed with sealing-wax ; place this in exact opposition with one of the ink marks upon the paper, and laying the tube along the pencil line, make a little mark upon it by a touch of the file, exactly corresponding with the other ink mark upon the paper. By repeating this operation, in the most careful manner, you will have 28 inches accurately measured upon the tube. Then 1st. by adapting an ivory point to the cistern, the extremity of which must exactly correspond to the lower file-mark upon the tube,—2nd. fixing the 28th inch division of the scale opposite the uppermost file mark,—and 3rd., keeping the surface of the mercury in the cistern always just touching the ivory point, the indications of your barometer may be fully relied on.* The construction of the cistern is described in the second volume of “*The Analyst*,” p. 217.

After the cistern has been fixed, and before entirely closing the bottom of it, of course, the sealing wax and gummed paper must be removed from the end of the tube.

With regard to Thermometers. For the purposes before stated three will be necessary: one—a self-registering, of Rutherford’s construction—for the minimum ; another self-registering for the maximum ; and a third to hang close by the barometer. These should be purchased of some philosophical instrument maker, on whom reliance can be placed ; where, also, the Hygrometer should be obtained.

* The corrections for the temperature of the mercurial column will be found in a table, p. 372, and for the bore of the tube, p. 363, of Daniell’s Essays. And when these are applied, the constant difference between the mean of any two barometers, within short distances, is attributable to elevation.

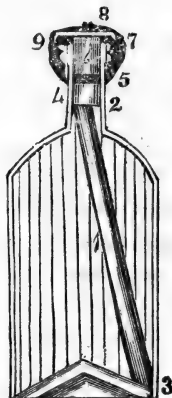
ON THE NON-PERMEABILITY OF GLASS BY WATER.

THE following experiments were made in the North and South Atlantic and Indian oceans, by Mr. Rudder, late of Birmingham, during his passage to New South Wales, with the view of ascertaining whether water passed through the pores of glass bottles, sunk at different depths in the ocean. The result of the experiment with the bottle, No. 4, prepared after the manner described in the annexed diagram, and sunk 150 fathoms, clearly proves the

No. 1.



No. 4.



No. 1.

E, Piece of wood supporting the cork H at A, and resting against the inside of the bottle at B.—H, cork.—G, sawdust and pitch.—I, wine.—J, canvass passing up the neck of the bottle to the outside, and covered with boiling pitch.—C, wooden plug, driven in with melted pitch upon the body J.—D, iron nail passed through the plug, C, over which a piece of canvass was passed, and that with the canvass at J, pitched over and firmly secured to the neck of the bottle with string, likewise pitched over, as at F.

No. 4.

1, Piece of wood supporting the cork, 4, at 2, and resting upon the bottom of the bottle at 3.—5, layer of melted pitch. 6, cork driven in with melted pitch, and afterwards covered over with a thick layer of pitch.

7, cap of sheet lead, driven upon the top of the cork and pitch, 6, and bound down with copper wire and string at 8.—9, outside coating of pitch, extending from the rim of the lead, covering over the neck of the bottle.

non-permeability of glass,—a fact which is corroborated by a series of experiments subsequently made by Mr. Wickenden, and described, by that gentleman, in a very lucid manner, on reading the Paper—of which the following is an abstract—before the members of the Birmingham Philosophical Institution.

A wine-bottle was prepared as described in the annexed diagram, No. 1; another was likewise thus secured:—a piece of wood was

placed in the bottle to support a cork, over which was inserted saw-dust and melted pitch; a wooden plug, dipped in hot pitch, was driven in, and through the top of the plug a nail was passed transversely, secured with twine; the whole was then coated over with melted pitch. Mr. Benson, the surgeon of the ship, *Princess Victoria*, also prepared a bottle as follows:—a cork was tightly driven in and covered over with bladder and leather, after which it was pitched and a wooden cap placed closely over the mouth and neck, secured with a piece of canvas. The three bottles were then sunk to the depth of 58 fathoms; when hauled up, the bottle, No. 1, contained about an ounce of water; the other two bottles were perfectly free from any liquid. The bottles were again lowered in 83 fathoms without any addition to the water, and a third time in 112 fathoms; when, on being carefully examined, No. 1 was found one-fourth full, and the water discoloured with the wine; the second bottle contained about an ounce of water: Mr. Benson's was, also, two-thirds full, with the cork driven in and floating on the surface, and the water much agitated, having the appearance of champagne when the cork is first drawn, the air producing a loud hissing in its effort to escape. In making this experiment the lines were impelled towards the west, by a strong current setting in from the east, which rendered it necessary to back the boat to the west, with considerable rapidity, in order to sink the lines perpendicularly. On the bottles being lowered a fourth time to the same depth, viz., 112 fathoms, Mr. Benson's bottle, when brought up, was quite full of water, and the cork replaced in its original position; the water in bottle No. 2 was not increased, but the nail, passed through the plug, was very considerably bent inward, and the top of the cork and pitch brought nearly on a level with the glass. The bottle No. 1 had received an additional quantity of water, making it one-third full, but there was no perceptible change in the outer coverings.

Another experiment was subsequently made by sinking a bottle, prepared as described in figure 4, in the subjoined diagram, to the depth of 142 fathoms, sustaining a pressure of about 426 pounds on the inch. When drawn up, it was found that no water had penetrated the bottle, and the only perceptible alteration was an indentation of about one-fourth of an inch in the lead, produced by the excessive pressure.

Two other bottles were prepared in a similar manner, with the exception of the lead caps, and were sunk to a depth of 102 fathoms. These bottles were filled with water, and the corks which, previous to immersion, stood nearly half an inch above the necks of the bottles, had been so much compressed as to allow the water to pass round them. One of the corks exhibited this compressed appearance for a length of time after it was drawn up, leaving the pitch standing like a wall above the neck of the bottle.

The next experiment was made in the jolly boat, at some distance from the ship, as on former occasions; when three bottles were sunk to the depth of 150 fathoms, and, consequently, subjected to a pressure of about 450 pounds on the square inch. When drawn up, it was discovered that Mr. Benson's bottle was full of water, and Mr. Rudder's perfectly free from all fluid. The bottle sunk by Mr. Benson was prepared by placing a wooden stay within the bottle, as shewn in figure 4, upon which a cork was firmly driven. The neck of the bottle was then filled with melted pitch, into which a cork was forced down; over the whole was tied a piece of leather, and the neck of the bottle immersed in pitch. Mr. Rudder's first bottle was prepared in a similar manner to Mr. Benson's, excepting that the cork was cut off flush with the neck of the bottle (which, being patent, was consequently true), and, after being dipped in boiling pitch, a halfpenny was imbedded upon the top of the cork. The second bottle had the wooden stay for support to the cork, fixed perpendicularly; and over the above-described stopping a cap of lead, of about one-eighth of an inch in thickness, was secured, and pitched over, excepting on the upper surface of the lead. The appearance of the respective bottles, when drawn up, was as follows: Mr. Benson's bottle had the corks and their covering so compressed that they were nearly three quarters of an inch below the rim of the neck, and the bottle as full of water as bottles usually are of wine. The air in the neck of the bottle, which must have been highly compressed, continued to issue through the pores of the cork for a considerable time after the bottle had been drawn up. In Mr. Rudder's first bottle no alteration was apparent; and in the second the only change that had taken place was the compression of the lead inwards, forming a concavity, of about one-fourth of an inch in depth, in the centre.

As the experiments made by Mr. Rudder and Mr. Benson were considered inconclusive, in relation to the question of the porosity of glass, or its permeability by water, (the pressure of a column of water of 900 feet, the depth to which their bottles were plunged, not exceeding a pressure of 450 pounds on the square inch), Mr. Wickenden, with the assistance of an intelligent member of the Institution, proceeded to make the following experiments. Glass balls, varying in size and thickness, were hermetically sealed, and subjected to a pressure of 1050 pounds on the inch; that is equivalent to the weight of a column of water of about 2000 feet, or 350 fathoms, exceeding the pressure to which the bottles were exposed by 200 fathoms. The integrity of the globes was maintained in this experiment, and not a drop of water entered. In order to submit the globes to the greatest accessible pressure, it was determined to place them in the plunger of Bramah's hydraulic press. The balls, which were three inches in diameter, were inclosed in a box, perforated to admit the water, and after being subjected to a superficial pressure of between eighteen and nineteen tons; or about a ton and a half on the square inch, (which is equal to a column of water of 1120 fathoms, or 6720 feet, that is, a weight of 3360 pounds on the square inch) they were taken out uninjured, and perfectly free from internal moisture.

From the whole of the foregoing experiments, the following conclusions may be drawn. 1st. It appears extremely difficult, by stopping the mouths of bottles with extraneous matters, such as cork, wood, pitch, &c., to resist the stupendous weight of columns of water of great altitude.

2ndly. That at a depth of 150 fathoms, or 900 feet,—that is, with a pressure of about 450lbs. on the square inch, glass is *not* permeable by water.

By the experiments made with glass balls, the difficulties of stopping are overcome, whilst a form is employed better adapted to resist the higher degrees of pressure; and the presumptive evidence of the non-porosity of glass, or rather impermeability by water, is greatly increased.

The question assumed as proved by Mr. Rudder's experiments, is the non-porosity of glass. The transmission of light and magnetic

influence through this substance might, perhaps, be considered as sufficient evidence of such structure. A more accurate statement of the object of these experiments, therefore, would be to prove the impermeability of glass by water under high degrees of pressure.—Were it possible for glass balls to resist the sudden expansion and heat of steam, the proof required would be more probably attained by the tenuity of the elastic vapour of water, than by the same fluid under the most severe pressure.

In one of Mr. Rudder's experiments, it was observed that the cork had been forced into the bottle, and was seen floating on the surface of the water which half filled the bottle, and upon replunging the bottle to the same depth, 112 fathoms, the vessel filled and the cork was replaced. The replacement of the cork as originally inserted, or reversed, so far as position is concerned, is purely accidental; when the cork, by equal pressure, has been so far reduced in all its dimensions that either end of it would enter into the neck of the bottle, that part would be certain to be uppermost, which presented itself to the neck, during the ascent of the bottle.

It may not, perhaps, be considered altogether irrelevant to the present subject, to allude to the astonishing power of the whale to resist pressure. When struck with the harpoon, the whale dives perpendicularly, and the quantity of line they sometimes take out of the boat, in a perpendicular descent, Captain Scoresby considers a good measure of the depth. By this rule, they have been known to descend a mile; bearing, consequently, a pressure of one ton and a quarter on every square inch; which multiplied by the extent of surface of the animal, varying in length from 60 to 200 feet, and of proportionate width, gives an amount almost incredible—720,000 tons!

It is very reasonable to enquire if there be any provision in the structure of diving animals, to enable them to sustain such pressure. In a paper read by Mr. Houston, at the late Meeting of the British Association, "On Peculiarities in Circulating Organs of Diving Animals," it was observed that circulation, though principally carried on and continued by the vital principle, and ceasing altogether when that principle becomes extinct, was to some extent amenable to the laws of hydraulics.

The circulation through a limb is affected by position ; the removal or increase of atmospheric pressure is known to affect the circulation of the skin ; the action of the air and chest, during respiration, also modify the circulation. It is a well-established fact that a whale can suspend respiration for twenty minutes, and sink to the depth of an English mile in the ocean.

The effect of the interrupted respiration and increased external pressure, must necessarily be an alteration in the circulation, which, unless met by a suitable provision, must prove inconvenient, if not fatal, to the animal. That such a provision existed, Mr. Houston was prepared to prove ; it existed in the enormous size and complexity of the venous system, particularly in the right cavities of the heart,—the venæ cava, the hepatic veins, and those of the abdominal and spinal canal. These facts were illustrated by some elegant preparations of the injected venous system of the seal and porpoise. The subject was farther pursued, and the circulation of some animals possessing the power of suspending respiration for a less considerable time, was examined ; the result was highly satisfactory—and it was proved, by demonstration, from several specimens, that the enlargement of the heart and venous system was proportionate to the power of suspending respiration. Several new facts were adduced, both in comparative anatomy and pathology, which would appear highly confirmatory of Mr. H.'s physiological views as stated in the communication.

SONNET.

GUIDE me, O God, as with a father's hand,
Through this world's darksome wilderness : O stay
My footsteps, trembling on Temptation's sand,
Uphold them o'er the rough and narrow way
Which leadeth unto life ; that so I may,
Strong in thy might, all sinful wiles withstand,
My inmost thoughts conform to thy command,
Nor from thy will in act or purpose stray.
All-present One ! who dwellest in the light
None may approach unto, yet deign'st to hear
The sigh scarce-breathed, the heart's unlettered prayer,—
Shield me from every dark desponding fear—
My best affections to thyself unite—
And let thy favour be my chiefest care.

E. S.

A RETROSPECT OF THE LITERATURE OF BRITISH ORNITHOLOGY,

FROM THE CLOSE OF THE 17TH CENTURY TO THE PRESENT TIME.

THROUGHOUT the whole extensive domain of Nature, there is nothing which can more deeply interest and delight the inquisitive and reflecting mind than the study of Birds. That, from the earliest ages, these beautiful animals should have, in an especial way, attracted the notice of Man, no one, even slightly acquainted with their structure and economy, and the wonderful instincts which they exhibit in their architecture and migrations, can, for a moment, feel surprized. Their size and symmetry, the elegance of figure, the splendour of plumage, the power and rapidity of flight, and the melody of song which many of them possess,—the astonishing industry and skill, the exemplary patience and solicitude, affection and courage which they almost invariably display in the construction of their nests, and the rearing and protection of their helpless young, are such as must have arrested the eye of the more careless observer, and occasionally stirred up even the most torpid brain from its habitual slumbers. Hence, it has happened that, in all times and countries, Birds have, more frequently than any other part of the animal creation, employed the descriptive powers of the Natural Historian, and the pencil of the Artist.

Yet an examination of the ornithological writings of the British Naturalists of the eighteenth century is, unfortunately, far better calculated to propagate error than afford correct information,—to promote the interests of the Author and “the Trade,” rather than those of truth and science. Let any one read over the fabulous accounts of the hyëmal submersion of the Swallow,—the miraculous stories which are told of the properties possessed by the carcase of the splendid King-fisher, and the elegant little wren,—of the extrication of the Bernacle Goose from the Lepas or Bernacle shell,—all gravely narrated,—aye, and manfully sworn to upon the four Gospels,—by eye-witnesses, of reputable character and reputed ve-

racity ; and he will rise from the perusal with increased scepticism for human testimony, with aggravated feelings of suspicion or contempt for all the boasted powers of human reasoning and observation. Let him, for a moment, compare the figures of the Golden Eagle of old Eleazar Albin, the Eagle-owl of Pennant and of Lewin, and the Bittern of the modest Mr. Hayes, with their splendid prototypes in the Museum or the Menagerie ; and he will feel astonished that any human being, gifted with the ordinary vision of two ordinary eyes, could have put forth such miserable daubs,—unfit to grace even the sign-post of a village-hostelry,—for correct representations of these magnificent denizens of the mountain, the wilderness, and the waters.

Ere yet we proceed to an examination of the splendid work of Mr. Gould, by the appearance of which these observations have been elicited, it may assist the investigations of the student, and serve to refresh the memory of the more accomplished Naturalist, if we briefly retrace the progress of British Ornithology, from the close of the seventeenth century to the present time. In this retrospect, our notices will be principally, although not exclusively, restricted to the productions of British writers, and, of these, such as have fallen under our own scrutiny. They will admit of convenient distribution into three Classes: 1. the works which treat exclusively of Birds ; 2. those wherein Ornithology forms part only of a systematic description of the Animal Kingdom ; and 3. those miscellaneous publications in which the subject is partially and incidentally discussed. Under this three-fold division, we shall enumerate, and notice, the various books, as nearly as recollection, unaided by the light of an extensive ornithological library, will enable us to arrange them, in the order of their publication.

First, then, in the year, 1673, the celebrated *Ornithology* of Francis Willughby, appeared in a folio volume, under the auspices of his friend and associate, the profound and illustrious RAY: who translated it from the original Latin edition ; corrected its errors ; supplied several deficiencies ; added three entire chapters ; and prefixed to the whole, an account of the deceased naturalist. The descriptions of the various birds, which this work contains, are, in general, exceedingly accurate and minute ; the plates,—seventy-

eight in number,—surprizingly spirited and correct, for the period at which they were executed. The labours of many of their successors upon the same path, verily dwindle into insignificance in the splendour of these two morning-lights of British Ornithology.—Willughby was of Middleton, in the county of Warwick ; and died, at the age of thirty-six, in June, 1672. Never do we pass by the old grey gate, and the moss-grown paling, which skirt the ancient domain of the Lords of Middleton, without paying homage, in the innermost recesses of the spirit, to the elevated character and talents of Francis Willughby and his illustrious friend. Stratford, boasting of her Shakespeare, may awaken the enthusiasm of the child of imagination, and attract to the shrine, sanctified by the relics of her immortal bard, the vagrant foot of the pilgrim of the muses. But the philosopher, and the man of science, will contemplate with feelings of veneration, far more deep, and lofty, and imperishable, the old mansion-house at Middleton, as the residence of Willughby, and the asylum of the enlightened, the high-minded, and uncompromising JOHN RAY, in the season of his adversity. His admirable *Synopsis of Birds and Fishes* (*Synopsis Methodica Avium et Piscium*), an octavo volume, was published, in London, in 1713. Upon any production of this great and good man,—the Linnæus of his country—we should deem it little less than profanation to obtrude a comment.

The first two volumes of Eleazar Albin's *History of Birds*, came out in 1738 ; and a third, in the form of a *Supplement*, two years subsequently. They contain, altogether, three hundred and five engravings of birds, for the most part British, and one of the *bat*, far more "curiously engraven" than "exactly coloured," by the Author. The descriptions of the different subjects have been largely borrowed from Willughby. The first and second volumes are enriched with "Notes and Observations," by the celebrated Dr. Derham, author of two popular publications, respectively entitled *Physico-* and *Astro-Theology* ; and superintendant of a posthumous edition of the works of Ray. In the absence of Willughby's, the student will find Albin's, even now, an useful book of reference. A plain copy, when it can be procured, is greatly preferable to the coloured. Edwards' *Natural History of Birds, and other rare and*

undescribed Animals, four volumes quarto, bearing the date of 1743, with the three supplementary volumes, entitled *Gleanings*,—of 1751, is much superior to that of Albin, both in the literary and iconographical departments. It contains, however, but few British birds.

The celebrated *Ornithologie* of Brisson, comprized in six quarto volumes, made its appearance, in 1760. It is illustrated with numerous and tolerably correct engravings; furnished with luminous descriptions in French and Latin; and constitutes a valuable collection of ornithological facts, frequently referred to by modern writers. An Abstract of it, entitled *Ornithologia sive Synopsis Methodica*, written in Latin, and destitute of figures, was published, in two octavo volumes, at Leyden, in 1763. The descriptions, which it contains, of the various Orders genera, species, and varieties of Birds, are singularly expressive, luminous, and concise. They are, both, admirable works for the ornithological student.

The literary world was, in 1775, favoured, by Mr. Hayes, with a *Natural History of British Birds*, in folio, containing forty plates; which, although “accurately drawn and beautifully coloured,”—so sayeth the unassuming author,—are worth little more than the price of waste paper. Latham’s *General Synopsis of Birds*,* bearing the date of 1781, and published in four quarto volumes, constitutes a very important contribution to ornithological science; and is now rarely to be met with. Two volumes of *Supplement* appeared, at different periods, several years subsequently. Of Walcot’s *Synopsis of British Birds*, which came out in 1789, we have never yet been able to procure a copy. The valuable *Index Ornithologicus*, of Latham,—a quarto volume,—was produced in 1790.

The year 1797, was rendered memorable in the annals of wood-engraving, if not of British Ornithology, by the appearance of Bewick’s justly celebrated and popular work, entitled *The History of*

* Professor Rennie, among the works of *Literary Naturalists* (*Ornith. Dictionary*, p. lvii), records the title of another production by Latham,—*A General History of Birds*, 10 vols. 4to. Winchester, 1828. Never having heard of the existence of such a work, and well aware that even the most renowned and vigilant authors are occasionally not over-scrupulous in the correctness of their quotations, we suspect that an error has been committed in transcribing the title, and date, of this publication.

British Birds. This production is too well known to require comment or eulogium here. The sixth and latest edition,—two octavo volumes,—came out in 1826,—a short time previously to the decease of its highly-gifted and lamented author.* The appearance of the original edition was followed by the publication of the first volume of Donovan's *Natural History of British Birds*, in 1799; and by that of the first volume of Lewin's *Birds of Great Britain*, in 1800.† The former was completed by the appearance of a tenth volume, in 1819; and contains two hundred and forty plates of birds tolerably drawn, and sometimes prettily,—although, on the whole, tawdryly coloured. Lewin's work, the eighth and last volume of which appeared in 1801, exhibits two hundred and seventy-eight figures of birds, and fifty-eight plates of their eggs, generally, with respect alike to their outline and their colouring, of miserable execution. Of the accompanying descriptions in English and French, the principal merit consists in their brevity: for nonsense is generally diffuse.—The utility of either of these costly productions, whether contemplated as works of science or of art, we acknowledge ourselves utterly destitute of the ability to comprehend.

The year 1802 gave birth to Montagu's justly celebrated *Ornithological Dictionary*, in two octavo volumes. It is evidently the fruit of long, patient, and correct observation; and pregnant with instruction. Copies of it have now become exceedingly scarce. A

* A greater or more acceptable service could not, we conceive, be rendered to Ornithological Science in this country, than the issue of a *corrected* re-print of Bewick's delightful volumes. The publication of such a work in monthly numbers would, while securing an abundant sale and ample remuneration, render it accessible to all those for whose perusal and profit it would be mainly intended; and to-whom the more costly productions of Selby, Gould, and Meyer, must for ever remain sealed volumes. The admirable work of Mr. Yarrell, on *British Fishes*, now in the course of publication, may be pointed out, as a worthy example of the form and style in which such an undertaking should be executed. Upon the "daft friend," and enthusiastic eulogist of Bewick, this hint may not, peradventure, be thrown away. No man is better qualified, by talent and knowledge of the subject, than Mr. Dovaston, to confer this signal benefit on the good cause of popular instruction and amusement; and, at the same time, erect, with pious hand, an imperishable monument—*ære vel saxo perennius*,—to the memory of departed worth and genius.

† Some writers would make it appear that the early volumes of this work were published in 1789. Our copy bears the date above specified; without the slightest intimation that it has attained the certainly unmerited honours of a second edition.

Supplement, containing twenty-four accurate but coarse engravings, and fully sustaining the high reputation of its predecessor, followed in 1813. Of the recent Edition of this valuable work, by Professor Rennie, we shall, ere long, have occasion to speak.

Some time towards the close of the eighteenth century, a work, in three duodecimo volumes, entitled *The Natural History of Birds*, was published in London. It bears, on the title-page, neither the name of the author, nor even, by an unpardonable act of negligence, the date of publication. By the voice of common rumour, it is very confidently stated to be the production of a highly respectable gentleman of Birmingham. Whoever he be, the author has no cause to blush for the character of his intellectual progeny. It is really a very creditable performance; and contains, as promised in the title-page, "a variety of facts." Of the "one hundred copperplates" with which it is "illustrated," we are unable to pronounce an equally favourable opinion. Neither the credit of the artist nor the work would, we apprehend, have sustained much injury from their total omission; and the purse of the author or the publisher, or both, would have been marvellously benefited by it. The two duodecimo volumes of a very instructive and pleasingly-written *Natural History of Birds, intended chiefly for young persons*, by the highly-gifted, poetical, and consequently unfortunate, Mrs. Charlotte Smith, were published, in London, in 1807.

Of the amusing and not less important *British Song-Birds*, of Bolton, and *British Warblers*, of Mr. Sweet, we are unable precisely to specify the dates. Our copy of the *former* unfortunately lacketh its title-page: and the *latter* we do not possess. Atkinson's useful *Compendium of Ornithology*, 8vo., London, was published in 1820; Jennings' *Ornithologia, a Poem*, in two parts, octavo, with copious notes, in 1828. The prose observations of the latter are, in our sober judgment, far more edifying than his wildest poetical flights,—his plain and simple *notes*, more pleasing to our fastidious ear, than his artificial song. Science and Poetry, like certain worthy personages of our acquaintance, mightily amiable, edifying, and harmonious, when apart, make, by their ill-sorted union, but a very sorry and discordant couple. The undepraved intellectual appetite instinctively recoils from the incongruous but too fashionable admixture of the solid aliments of fact with the sweets of fiction.

From this austere and sweeping sentence of condemnation, we are yet half inclined to exempt an interesting little Poem, entitled *The Birds of Scotland*, by Graham, author of *The Sabbath*; and published at Edinburgh, in 1806. It possesses the rare merit of conveying much accurate information on the habits and nidification of the north-British birds, in a strain of very sweet and even fascinating song. Compared with the pert, noisy, and passerine twittings of Mr. Jennings' vulgar muse, the chaste and melodious outpourings of the spirit of the Scottish bard fall on the enraptured ear, like the morning-hymn of the musical thrush, or the "sweet lamentations of the solitary nightingale to the evening-star."

In our anxiety to despatch the minor brood of ornithological scribes—the *Warblers* of their class,—we have somewhat deviated from the line of history, and considerably outstripped our sober guide. We must now retrace our steps to contemplate the remnant of the *Eagles*. In the year 1820, appeared, in two octavo volumes, the truly scientific and valuable *Manual of European Ornithology* (*Manuel d'Ornithologie, ou Tableau Systématique des Oiseaux qui se trouvent en Europe*), of Temminck. This work, the production of a Dutchman, is written in the French language. Its enlightened author seems to have zealously, and almost exclusively, devoted his life and fortune to the study of his subject; and to have visited all the more celebrated museums, and every accessible region, of Europe, in search of the requisite information. The arrangement which he has adopted, is, with very rare exceptions, that of his great predecessor, Linnæus: and his few and slight deviations are invariably dictated by sound judgment, and sanctioned by deliberate reflection. His mind is, fortunately, untainted with the fashionable rage—that worse than Cholera-plague of modern science,—for inventing new systems, and forging new names, more unintelligible and discordant than, erst, the tongues which broke upon the ear of ancient Babel. These volumes, the first edition of which was published in 1815, comprehend almost every known species of European bird; and constitute an admirable text-book for the student. A new edition, with many important additions, is, we understand, on the eve of publication.

Werner, a German artist, resident at Paris, commenced, some five

years ago, an octavo *Atlas of the Birds of Europe* (*Atlas des Oiseaux d'Europe*), illustrative of Temminck's work. One Number (*Livraison*) containing ten figures of birds, each the subject of a separate plate, drawn upon stone, and plain, or carefully coloured, should, in accordance with the original plan, have appeared, regularly, at stated intervals. Up to the present time—December, 1834,—thirty only of these numbers have, we believe, reached London. Since the “three glorious days” of July, 1830, the Sciences, in Paris, seem to have been doomed to a somewhat inglorious slumber. Haply, they may have not yet quite recovered from the stunning shock of the thunder-storm of the Barricades; which unluckily scared from their propriety, not only the crawling but the winged animals,—the *Reptilia* and the *Aves*,—the birds as well as the Bourbons,—of the Gallic capital. Had the later numbers of Werner's *Illustrations of Temminck* at all equalled the first three in correctness of outline, and chasteness and fidelity of colouring, his *Atlas* would have proved an invaluable acquisition to the science of Ornithology. Unfortunately, this is not the case.

We now come to the great, the Herculean work of Prideaux John Selby,—Herculean, not only from its size, but from the time and labour which must have been expended upon its execution. Seven Parts, each consisting, on the average, of about nine plates, in elephant folio, constitute the first Division and Volume of the *Illustrations of British Ornithology*; and comprize the whole of the Land-Birds. The first Part was published in 1825. The Second Division, including the Water-Birds, is still, if we err not, in the course of publication; but must now be rapidly drawing to a close. The first Division of the *Plates* was accompanied by an octavo volume of descriptive matter, also entitled *Illustrations of British Ornithology*, Part I.; clearly, concisely, and sensibly written; and containing much information, alike correct and valuable. The arrangement and genera adopted, are, with few and slight deviations, those of Temminck. Some two years ago, Mr. Selby formally announced, through the medium of the press, that a *new Edition* of the *First* would be shortly published with the *Second Part* of his lesser or descriptive work. The fulfilment of this important, but hitherto unredeemed, pledge, we have long been anxiously expecting. To the

Student, it will prove,—if we may venture to predict of the future, from a retrospect of the past,—a work of great practical utility and value. At the same time, it grieves us to state that, in the perhaps exaggerated expectations which we had formed of Mr. Selby's greater work, we have been most woefully disappointed. The figures of some of the birds, therein delineated, are, indeed, executed with admirable fidelity, boldness, and spirit; but, in general, they do not come out well from the ground: they are deficient in prominence and rotundity; and look as if they had been drawn from flattened specimens. This objection, if we recollect right,—for the cumbrous work is not now before us,—applies, with peculiar force, to the figure of the Great Bustard (vol. i, plate 64). The outline of many of the subjects is, moreover, incorrect; and the character not happily caught, and embodied, by the Artist. Thus, were it not for the fortunate accompaniment of the name, we should not have recognized, in Mr. Selby's sketch, the figure of our old friend, the Rook,—the bare-faced crow, *Corvus nudirostris*, of the quaint, humourous, and sarcastic Senex.* The smaller birds are, also, without exception, in the rather awkward, though amusing, predicament of the Irishman's Prize-Bull,—“a great deal larger than the life.”

Most of our readers are, probably, aware that Professor Rennie, so celebrated for his ambi-dexterity and dispatch in the manufacture of books, has, in addition to his other almost innumerable works, published a new Edition of Col. Montagu's valuable Dictionary, under the somewhat extraordinary title of an *Ornithological Dictionary of British Birds*. Now what any *Ornithological Dictionary* could properly have treated of save *Birds*, we possess not the subtlety of brain, fitting it to comprehend. This strange blunder would have been, however, like a mole on the face of an otherwise beautiful woman, but of little consequence, had the book proved what, in these times, a Dictionary of British Birds, with the materials, the talents, and the industry, possessed by the highly-gifted Editor, ought surely to have been. Still, the numerous sins of omission and commission, displayed in this most faulty compilation, have already been visited so severely by the lash of criticism, that

* See *Analyst*, vol. i, p. 259.

we will forbear to aggravate the work of torture by renewed flagellation; and sustain our well-known character for mercy to the literary delinquent, by rather pouring oil and wine upon the Professor's wounds; in grateful remembrance of the important services which he has already rendered—and in pleasing anticipation of those which he may yet render—to the cause of natural science in this country.

Mr. Gould, to whose splendid labours we shall anon revert, closes with Mr. Slaney, Mr. Mudie, and the aforesaid Professor Rennie, the enumeration of ornithological writers belonging to the First Division of our retrospect.

The Outline of the Smaller British Birds, a duodecimo volume, by R. A. Slaney, Esq., M. P., is a very pleasing and meritorious production; reflecting honour alike on the character and talents of the British Senator. It abounds with entertaining, although not original, matter. We beg leave to recommend it especially to the notice of "Ladies and young persons," for whose use it is principally intended. Would to Heaven that all our Parliament-men were, in the intervals of relaxation from their senatorial duties, as honourably, usefully, and innocently occupied, as the amiable and intellectual Mr. Slaney!

The little work, entitled *Domestic Habits of Birds*, by Professor Rennie, and forming one of the volumes of the *Library of Entertaining Knowledge*, will be read, by the ornithological student, with much interest and advantage. It contains a full and tolerably correct description of the process of incubation, and the development of the chick, in the egg of birds, with illustrative sketches on wood, copied principally from the labours of the celebrated Malpighi.

Of the two duodecimo volumes of Mr. Mudie, *The Feathered Tribes of the British Isles*, published during the present year, our opinion is not quite so favourable as that which the public has been pleased, in its wisdom, to pronounce upon the work. The title is indeed taking; and the title-page adorned with a shewy vignette; and the plates are prettily coloured; and the volumes, altogether, neatly got up; and will, doubtless, form a very pretty present to those who regard the exterior decorations, and typographical execution, rather than the internal constitution and intrinsic value, of a

book. Trash should, verily, be gilded, or it will not catch the eye, and excite the appetite, of “babes and boobies;” but the sound and substantial aliment, fitted to satiate the intellectual wants of the public in these intellectual times, requires no such flimsy and meretricious ornament. The adoption of these “tricks of the trade” is the more to be regretted in an author who, like Mr. Mudie, has really no need for such despicable auxiliaries; and who, if he studied the art of literary condensation with half the zeal and diligence displayed by him, in the production of books, would shortly assume that elevated station, in the popular opinion, as an interesting and instructive writer, which his industry and acquirements must ultimately command. He is evidently an accurate and experienced observer of the facts and phenomena of Natural History; in the description of which he *occasionally* exhibits so much facility, felicity, and talent.

II. We have now reached the termination of the *First Stage* of our retrospect; and, in entering upon the *Second*, which comprehends those works wherein Ornithology forms part only of a systematic description of the Animal Kingdom, have, first, to notice the useful *Outlines of the Natural History of Great Britain and Ireland*, published by Dr. Berkenhout, in three octavo volumes, in the year 1769. A Third and, we believe, last Edition, in two volumes, under the title of *Synopsis*, bears the date of 1795. It comprehends a good description of two hundred and forty-six species of British birds, arranged according to the Linnæan system. Seven years subsequently to the appearance of Berkenhout's First Edition—1776—the zoological labours of Pennant, in a quarto and an octavo edition, of four volumes each, were given to the world. The *British Zoology* constitutes a shewy and amusing rather than profound work. The last, a posthumous edition, in four octavo volumes, illustrated with many spirited but not very accurate engravings of British animals, appeared in 1812. It exhibits numerous errors and deficiencies in the arrangement and delineation of the various species. Pulteney published, in 1799, his valuable *Catalogue of the Birds of Dorsetshire*. It originally formed part of Hutchinson's new edition of the History of that county; but is now, we believe, with those of the shells and other natural productions of Dorset, sold separately from

it. This was followed by the appearance, in the next year, of the first volume of Shaw's costly but inaccurate compilation, y'clept *General Zoology or Systematic Natural History*. Numerous volumes have subsequently appeared. Whether the work have yet attained a sickly maturity, or died of sheer exhaustion in its vacillating progress, we have never felt sufficient interest in its fate to take the trouble of inquiring. The Ornithological Department, apparently the best of the work, has, we believe, been executed by Mr. Stephens, of entomological celebrity. Mr. Stewart's very useful *Elements*, consisting of two octavo volumes, came out at Edinburgh about the same period. It has long been out of print: and in 1806, Dr. Turton gave to the literary world, two important publications: the one, a Systematic Description of British Animals, under the objectionable title of *The British Fauna*; the other, a *General System of Nature*, in seven octavo volumes, translated principally from Gmelin's edition of Linnæus, with numerous additions and corrections, and a "life of Linné." Both of these works of Dr. Turton may be consulted, by the student, with great advantage. The twelfth and last Edition of the *Systema Naturæ* of the "immortal Swede" was, we may observe in passing, published, in three octavo volumes, in 1766: the closet-compilation of Gmelin, ten octavo volumes, in 1790. The latter teems with errors.

The year 1816 was distinguished in the annals of Zoology, by the appearance of Cuvier's *Animal Kingdom—Règne Animal*,—a work, consisting of four octavo volumes; for the value of which the name alone of the illustrious author constitutes a sufficient pledge. A second Edition of it, in five volumes,—the last two comprehending the *Crustacea*, *Arachnides*, and *Insecta*, by the celebrated Latreille,—was published in 1829; and a Series of exquisite engravings, illustrative of it, under the title of *Iconographie du Règne Animal*, is now in progress of publication by M. Guérin, of Paris. Each number (livraison)—fifty of which will complete the work—contains ten plates, plain or coloured. We greatly prefer the former. Thirty-seven of these numbers have already appeared. Of the English translation of the *First Edition* of Cuvier's work, by "Edward Griffith and others," or of the choice and execution of the figures accompanying, rather than illustrating, it, we lament our inability

to speak in terms of commendation, or even of forbearance. It is a wretched mess; of which the manifold blunders and deficiencies are only rendered more conspicuous by the imposing air of graphic splendour with which an attempt has been made to invest the unseemly production. A very cheap and excellent translation of the *Second Edition* is now, however, coming out in shilling numbers. The colouring of the plates, which ought not to have been attempted at such a price, is the only flaw which we have hitherto been able to detect in the character and execution of this meritorious and, we would fain hope, popular undertaking.

The *Manual of the Elements of Natural History*, ably translated from the tenth German Edition of the celebrated Blumenbach, by Mr. Gore, of Bath, appeared in 1825: and Stark's instructive *Elements of Natural History*—two octavo volumes,—about the same period. Dr. Fleming, with his *History of British Animals*, admirably described in their several species; but wofully misnamed, and dislocated, according to the modern vagaries of scientific nomenclature and arrangement, brings up the rear of this the second division of our subject. The first volume of Dr. Fleming's work appeared in 1828: the second, we believe, has not yet been published.

III.—In the *Last Division* of our retrospect, comprehending *Miscellaneous Publications*, wherein the subject of Ornithology is only partially and incidentally discussed, the delightful *Natural History of Selborne*, by the Rev. Gilbert White, stands first in order of time, as in excellence. The work was originally published in quarto, in 1789; and contained, in addition to the matter more immediately interesting to the Naturalist, an account of the antiquities of Selborne. A cheap and beautiful duodecimo edition, with additions by Sir William Jardine, came out at Edinburgh, in 1830: and another, equally beautiful and still cheaper, by Captain Brown, has subsequently appeared. Low's *Fauna Orcadensis*, quarto, published, also, at Edinburgh, in 1813, will be found an interesting and valuable production. The popular volume, entitled, *The Journal of a Naturalist*, by Mr. Knappe, first made its appearance in 1827; and was most favourably received. A Third Edition was brought out in 1830. Were it only for the opportunity which it will afford, of

expunging the marvellous story of the fifteen frost-bound kites and the roosting fog (for, according to the literal construction of the lucid sentence wherein the "extraordinary capture" is recorded, the fog,—and not the unlucky birds,—is described as roosting*), we devoutly wish that the *Journal* may reach a fourth edition. Mr. Knappe must verily have been dreaming when he committed to paper the "confused reminiscence" of this wonderful event. Greater men than the author of the *Journal* have, however, sometimes been caught *napping*: *aliquando dormitat Homerus*,—Homer sometimes nods. Mr. Mudie, with his two hastily-compiled duodecimo volumes of *The British Naturalist*,—the second sadly inferior to its predecessor, in style and matter; and Mr. Jesse, with his modest and unpretending, but really instructive Series of *Gleanings of Natural History*,—the second published during the present year,—are the last authors whose writings we shall, in this paragraph, be called upon to notice.

At the close of a retrospect so long and, peradventure, uninteresting, we must content ourselves with a mere enumeration of the principal *Periodical Publications*, from which valuable information may be gleaned on the subject of British Ornithology. These are the *Philosophical Transactions of the Royal Society of London*; *Transactions of the Linnæan Society*; *Memoirs of the Wernerian Natural History Society*; Sowerby's *British Miscellany*—an interesting work which, commenced in 1804, did not, unfortunately, outlive the twelfth number; the *Zoological Journal*; Loudon's ably-conducted *Magazine of Natural History*; Rennie's *Field Naturalist's Magazine*; the *Zoological Magazine*; and the *Analyst*, our own very spirited and promising emanation of the provincial press! Rennie's work, the early numbers of which, consisting principally of translations, or mutilated extracts, from foreign or British

* "Roosting, one winter evening, on some very lofty elms, a fog came on during the night, which froze early in the morning and fastened the feet of the poor kites so firmly to the boughs, that some adventurous youths brought down, I think, fifteen of them so secured!"—*Journal of a Naturalist*: Third Edition, p. 226. The congregation of the kites on this distressing occasion, appears to us to have been little less extraordinary than the fact of their capture: for, as far as our observation extends, the British *Milvus* is a bird of solitary habits. Only on some very rare occasions, during the last thirty-six years, have we seen two kites,—and never more than two—in company.

writers, accord but sorrily with the title, perished in its infancy.— On the Structure and Physiology of the Bird-Class, an admirable Article, under the head of *Birds*, is given, by Dr. Macartney, in Rees' *Encyclopædia*.

Upon the *Nidification* of British Birds, one systematic work only has yet appeared, which can be confidently relied on for correctness in the outline and colouring of the egg, and fidelity in the description of the nest. It is the last in our catalogue, and will be noticed in due order. Bolton, to whose volume we have before cursorily adverted, exhibits forty rude and coarsely-coloured engravings of the nests and eggs of British Song-birds. The figures given in Lewin's *Ovarion*, or egg-repository, which we have long since noticed in a tone of merited reprehension, serve only to illustrate the truth of the ancient adage, "Like parent, like progeny." Graves' work upon Eggs, referred to by Mr. Slaney, we have not seen. Donovan's ovarian attempt is a perfect abortion. He laid only thrice: the specimens were few; and all addle. Rennie has produced an interesting work on this subject, entitled *The Architecture of Birds*: it combines much amusement and information with a large admixture of errors; but is not restricted to the nidification of British Birds: much correct description, and many valuable facts, relating to it, will be found in the poetical works of Graham and of Jennings, already noticed. Last, but not least, is the periodical publication, on *British Oology*, lately commenced by Mr. Hewitson, of Newcastle-upon-Tyne. Seventeen or eighteen numbers of it only have yet appeared. It is a really scientific and valuable production.— We have nothing to find fault with in this correct and elegant delineation of our British eggs, but the vexatious slowness of its progress, and the almost inaccessible altitude of its price.

Of Mr. Gould's magnificent work, *The Birds of Europe*, the First Part was published in June, 1832. Nine others have subsequently appeared: and the latter, we rejoice to observe, fully keep pace with, if they do not outstrip, their predecessors, in labour and beauty of execution. The productions of no British, nor of any European artist, with whose performances we are acquainted, can, for one moment, sustain a comparison with it. For correctness of outline, and splendour and fidelity of colouring, the birds of Mr. Gould are,

in fact, unrivalled. From the absence of all superfluous ornament, and the ease and elegance generally displayed in the attitude and grouping of the various subjects, we prefer them to even Audubon's great and justly-celebrated work. Each Part contains twenty plates, comprizing, on the average, about twenty-two species of European birds, with a page of concise but masterly description; from which much interesting and some original information may invariably be gleaned. One Part is published regularly every three months. On this plan, the whole, Mr. Gould calculates, will be completed in three—we take the liberty of substituting the numeral *four*, or even *five*—years from its commencement.* The work, considering the time, care, and labour, bestowed upon its execution, and the style in which it is got up, is exceedingly cheap: and ultimately its value will be greatly enhanced by the destruction of the lithograph, as promised in the Prospectus, when three hundred impressions shall have been taken from the stone. This important pledge, Mr. Gould will, we doubt not, most honourably redeem; as he has already done in his exquisite work on the Birds of India.

POSTSCRIPT—Since the preceding review was written, two works upon British Birds which had previously escaped our recollection or research, have fallen under observation; and four others have made their first appearance upon the stage of letters. A notice of these, however brief and imperfect, and late with respect to the former, will best atone for our negligence of them; and suffice, as regards the whole, to bring up our review of the literature of British Ornithology to the present period. All these publications are, with one exception, devoted to the Ornithology of the British islands: and, as treating exclusively of Birds, naturally belong to the First Section of our Retrospect.

Mr. Selby, it appears, published, as far back as 1833, the second edition of his first volume of *British Ornithology*; and, at the same time, completed the work by the addition of a second volume. Of

* There are, we calculate, at least four hundred distinct species of *European Birds*; the whole of which must be necessarily delineated by Mr. Gould. Of these, nearly three hundred are indigenous in, or periodical or occasional visitants of, the *British Islands*.

this fact we were not aware, when writing the cursory notice of the first edition. The two volumes, now lying before us, we opened with avidity: and the expectations, awakened in us by the previous labours, the great reputation, enlarged experience, and well-known attainments, of the Northumberland Ornithologist, have not been disappointed.

In these volumes, Mr. Selby has thought proper to abandon the classification of the wary and tardigrade Dutchman, Temminck, and substitute for it, the more shewy, scientific, and yet defective arrangement of Mr. Vigors. Hence, the solitary *Falco* genus, in the former edition, composed according to Temminck's views, of six Sections or Sub-genera,—the Eagles, Kites, Buzzards, Harriers, Hawks, and Falcons,—is now distributed into eleven distinct genera, under the head of the Natural Family of *Falconidæ*. Even the three British Eagles, themselves, are referred to three different genera, *Aquila*, *Haliæetus*, and *Pandion*. And the poor Owls, formerly distributed into two Sections, according as they exhibit, or are deficient in, certain auricular appendages, vulgarly 'yclept horns or ears, now figure in seven genera, arranged, with the Great Horned Owl,—*Bubo maximus*,—at their head, under the imposing family-title of the *Strigidæ*.

Amidst all his reforms of the nomenclature of Ornithology, we observe, with wonderment and surprize, that Mr. Selby retains the absurd, fantastical, and libellous designation of *Caprimulgus*, or Goat-sucker, for the European Night-jar,—*Vociferator melolontha*, of our anonymous correspondent.* He, also, with the addition of several recently-discovered birds to the "British Fauna," neglects the new species lately introduced by Mr. Gould; and, while admitting the Egyptian Neophron, on the ground of a solitary capture, the Austrian Pratincole, and the Cream-coloured Swift-foot, as British, still obstinately rejects that prince of British game-birds, the *Tetrao urogallus*, certainly not yet quite extinct in these islands. Of what crime, too, have the Guernsey Partridge, *Perdix rufa*, and

* See the very able and interesting contribution, by S. D. W., on Ornithological Nomenclature, in our present number. Professor Rennie's newly-coined scientific term for the Night-jar,—*Nyctichelidon* or *Night-Swallow*,—is altogether objectionable: for we can discern no striking mark of affinity of that bird with the *Swallow*-genus, save the enormous width of its gape.

the hairy Woodpecker, *Picus villosus*, been guilty, that, without judge or jury, they should be deprived of their birth-right as British subjects: especially, when the sable congener of the latter, *Picus martius*, a much more uncommon bird than either of the preceding, has, at length, however tardily, been admitted within the pale of the British aviary?

But the point upon which we are principally disposed to quarrel with Mr. Selby is, his utter and most inexplicable omission of the name, and of all allusion to the work, of his distinguished contemporary and rival, Mr. Gould. The first part of Mr. Gould's *Birds of Europe*, appeared in June, 1832: Mr. Selby's second edition bears the date of 1833: and yet the same silence is observed by the latter respecting the splendid production of the former, as though it did not exist. This is really "too bad."

Such circumstance is alike disgraceful to Mr. Selby, and derogatory to the pride and the splendour of human intellect and attainment. Little men may be as narrow-minded and as selfish as they please. We anticipate nothing better from them. The reptile and the slug obey, in the indulgence of their crawling propensities, merely the irresistible instincts of their low and degraded nature; and thus aptly fill the situation in which, by their structure and capacities, they were originally destined to appear. But intellectual Man, the Eagle of his kind, in pursuit of an imperishable reputation, should soar far above all paltry views of mere emolument, and indignantly scatter from his wing the debasing sordes of vulgar sins and prejudices. It grieveth us to behold the splendid animal stooping from the lofty path of his aspirations and his destinies, to soil his glowing plumage with the mud of earth,—to pursue ignoble game, or glut his craving upon carrion. After all, great and highly-gifted spirits, like the opulent in worldly gear, can best afford to be liberal to those around them: and our own not very limited experience of mankind invariably prompts us to look for some striking defect of cerebral development,—some paucity or poverty of intellect, in those who stubbornly refuse, or are slow, to render these dignified and ennobling acts of grace and justice to the fair claims of contemporary genius and enterprize.

A Systematic Catalogue of British Birds, arranged according to

the plan of Temminck, is the other publication which we neglected to notice in the body of our Review. It is the production of Dr. Shirley Palmer; intended as a guide to the beautiful, and now nearly perfect, Collection of British Birds, in Weaver's Birmingham Museum; and is a very useful work in its humble and unpretending way. In the new edition, now, we understand, in a state of preparation for the press, a more modern and scientific arrangement of the Birds will probably be adopted.

It now only remains for us to cursorily notice the four newly-published works to which we have before adverted. The first of these is the *Natural History of Birds*, by the well-known zoological writer, Robert Mudie: a very elaborately composed and instructive duodecimo volume; illustrated with numerous accurate and well-executed engravings on wood. It indicates a most profound and extensive knowledge of the organization of the Bird-Class; and will amply repay the ornithological student for the time and trouble expended upon an attentive perusal. Even in the present age of cheap publications, Mr. Mudie's *Natural History of Birds* is, by far, the cheapest production of the British press which we have hitherto seen.

In the spring of the present year, the first number of *Illustrations of British Birds*, by H. L. Meyer, made its appearance; and the publication of the work has since been regularly continued every month. Six of the numbers have already reached us. With the exception of Mr. Gould's work, this is the most promising attempt to illustrate the Ornithology of the British Islands which has yet fallen under our notice. The figures of the subjects are almost invariably drawn with great fidelity and spirit. Of the colouring we cannot speak in the same terms of commendation. The plumage of the Nuthatch, *Sitta Europæa*, and of the Land-rail, *Ortygometra crex*, in Part 11, is much too pale: and the hapless Bullfinch, *Pyrrhula vulgaris*, exhibits lamentable proof of the deficiency of the artist in the organ of colour. Four plates of Birds, and one of their eggs, are contained in each number. The execution of the latter, although tolerably neat and accurate, will sustain no comparison with the masterly productions of Mr. Hewitson's pencil.—The six numbers, now before us, comprehend thirty-five figures of

birds, and twenty-seven of their eggs; but as six of the former represent merely varieties of sex and age, twenty-nine distinct specimens only have hitherto been given. At this rate of progression, it will require nearly sixty numbers for the delineation of the whole of the British birds. A few lines of description, at the foot of each engraving excepted, no letter-press accompanies these numbers; which, if the author would put into full requisition his organs of colour and comparison, and bestow adequate time and labour on the pictorial department of his subject, will, when completed, form an interesting and valuable addition to the ornithological literature or, rather, iconography of the British islands.

Of a *Selection of British Birds, from Drawings by C. L. E. Perrott*, the First Part only has yet reached us. It contains five coloured engravings of birds,—that of the domestic Cock, *Phasianus Gallus*, uncommonly bold, animated, and faithful, and by far the best. It is, yet, somewhat unfortunate, that Mrs. Perrott should have commenced her Illustration of *British Ornithology* with the exhibition of a bird of notoriously Asiatic origin, and consequently, however long naturalized, only a domesticated alien on British ground.

This, however, is an oversight of little moment. The spirit in which the enterprize has been conceived, and thus far executed, would suffice to atone for a multitude of errors and defects far more glaring than this, or any other which we have been yet able to detect in the elegant productions of Mrs. Perrott's pencil and pen. It is delightful to behold a woman, of her rank in life, her intellect and acquirements, filling up her leisure hours with occupations such as this; and, instead of deluging and infecting society with sentimental and pestiferous trash, in the shape of novel or romance, rendering one of the sweetest of the arts subservient to the diffusion of the healthful and soul-elevating knowledge of some of the most splendid and interesting works of God's creation. We, "Scribes of the ANALYST," are too deeply smitten with a reverence for the purer and loftier graces of the female character; animated by too enthusiastic an admiration of its gifts, its virtues, and its excellencies,—by a spirit too manly and chivalrous, in everything which regards the interests and the feelings of enlightened woman, to visit with the asperities of criticism, a work

like this. On the contrary, we shall, on all occasions, throw the protecting shield of our power and influence around even the lowlier productions of female enterprize and talent ; and wreak summary vengeance upon the sconce of that hapless wight who shall dare to assail them with rudeness or insult.

Nothing would more signally promote and facilitate the study of Ornithology in this country, than the publication of an ably-executed book of the *Genera of Birds*. They who are acquainted with Curtis' work upon *British Entomology**, will, at once, comprehend our views on this subject. To those, however, who are not so fortunate as to have seen that exquisite and admirable production, some explanation of what we mean by a *Book of Genera*, will be requisite. From every genus, one species—and that the most strongly-marked,—of the British Birds should be selected, as the type, or example, of the genus. Of this, an engraving should be given, with a minutely accurate drawing of the *bill, tarsus, and foot*, as illustrative of those undeviating peculiarities of structure, upon which the generic character is, or ought to be, almost invariably founded ; and a figure of the egg. In the letter-press accompanying this plate, the distinguishing character of the Order, Family, Genus, and of *all the species* belonging to such genus, should be synoptically traced ; with the varieties resulting from age, sex, or season, and the average size, the habitation, and times of appearance, of the bird,—if a periodical visitant,—and its peculiarities of food and nidification. One hundred and thirty engravings, and a few sheets of letter-press, would suffice for the completion of such a work.

In a spirit of the most perfect kindness and respect, we would beg leave to suggest our project to the notice of Mrs. Perrott : confident, as we are, of her ability to do ample justice to the subject ; and apprehensive that, with the works of Selby, Gould, and Meyer, “in the market” before her, a mere “*Selection of British Birds*,” without plan or order, will not meet with the encouragement to which her talents and labours are so abundantly entitled.

* The *British Entomology* of Mr. John Curtis was commenced in 1824 ; and has since been regularly continued, in monthly numbers. It has, consequently, now well-nigh reached the close of the twelfth volume. We only lament that the work is not more extensively known, and its value more correctly appreciated, than it hitherto seems to have been.

The last work upon our list is *A Guide to an Arrangement of British Birds*, by the Rev. Francis Orpen Morris. It may be more correctly designated a *Guide to Nomenclature*,—for in point of arrangement it is very defective;—and, as such, would have been very serviceable in supplying a series of labels for an ornithological collection, had not the sins of omission and commission which it exhibits, been so numerous and glaring as greatly to impair, if not utterly destroy, its utility for such purpose. On whose or on what authority, we would beg leave to inquire, has the Reverend Author given the *Falco lithofalco* as a species distinct from the *F. æsalon*, or Merlin; or *Emberiza chlorocephala*,—merely, we believe, an accidental variety of *E. citrinella*,—as specifically different from the latter bird? On what ground, also, has he excluded the fork-tailed Kite, Tengmalm's Owl, and Gould's newly-discovered species of *Motacilla*, and *Regulus*, from the "British Fauna:" on whose assertion, admitted *Picus medius* as a British bird? The blunders of the Printer are scarcely less "rife and rank" than those of his clerical "Guide." *Aquila chrysaëtus*, *Otus brachyotus*, *Otus aurita*, *Strix flammeus*, *Strix stridula*, *Saxicola ænanthe*, *Sylvia atricapilla*, *Tetrax tetrax*, *Tetrax urogallus*, *Rallus aqualicus*, *Mergus gerrator*, and whole Snipe, are a few only of the errors, discrepancies, and obscurities, which a very cursory inspection of this well-meant but most faulty production has enabled us to detect. Three of the mistakes, however, justice requires us to add, have been noticed in the list of *Errata*. We are, at the same time, and by a like sense of justice, impelled to declare that the "Guide," now offered, by the Rev. F. O. Morris, to the British Ornithologist, is a very *blind* one.

Up to the present time, thirteen parts of Mr. Gould's *European Birds* have made their appearance. In our next number, we shall commence a regular series of analytical and critical notices,—each notice embracing three or four Parts,—of this splendid and unrivalled work.

Birmingham, September 12th, 1835.

BIRMINGHAM SOCIETY OF ARTS.

MODERN EXHIBITION.

IN passing our opinion on the various works here assembled, we shall "extenuate nothing—nor set down aught in malice;" yet, being "nothing, if not critical," we must occasionally say things, perchance, unpalatable to some of the parties concerned; whose good sense, however, will pardon our well-meant remarks; and feel less disposed to wax wrath at the careless sallies of our light-armed *badinage*, than they would do if subjected to the heavy fire of more serious and strictly-disciplined "troops of the line." Had we been inclined for severity, ample scope for animadversion might be found among a certain class of pictures, *dis-gracing* the walls of our Institution: but we have only alluded to a few of the most pretending specimens among a collection of (so called) *portraits*, which we should suppose were procured in the course of a pillage of ale-house signs. How much better to exclude such perpetrations; and by reducing the *quantity*, enhance the *quality* of the exhibited works. The rooms contain some gems of such peerless beauty, that we would fain exclude all such abortive attempts as only create ideas of the grotesque and absurd. The two noble pictures by Mac Clise are *alone* an Exhibition; and, even without the many other fine works, of which we shall endeavour, though briefly, to express our admiration, were enough to sustain the character of the present, as a good and interesting collection of modern works of art.

6. *View of Clovelly, Devon.*—*W. Fowler.* A very pretty little picture, with spirited figures in the foreground, and a morning haze over the distant landscape; which is skilfully and effectively painted.

9. *The Painter's Model tired of sitting.*—*J. Ward, R. A.* Represented by a little urchin, who may be supposed to have played either Cupid or a cherub, according to the spectator's fancy for mythology or theology. The young model has grown weary, and huddled himself up into a most uncouth position; we cannot understand the aged, puckered appearance of the face, or the raddle hue of the skin.

15. *Portrait of Miss L. A. Twamley.*—*J. Hill.* A simple, natural, and unpretending picture, bearing a strong resemblance to the original, and giving evidence of great talent and good taste in the young and highly-gifted artist.

17. *Landscape.*—*J. M. W. Turner, R. A.* This picture is highly interesting, as shewing the extraordinary change in the style of this great painter, being, it would appear, one of his early productions. Dark, sombre, and subdued in tone, heavily shadowed, and without a tint of brilliant colouring throughout. How different to his recent paintings!—where the brightest and most dazzling sunlight, making each colour like a rainbow-hue—and the dark, livid, storm-

cloud, create such wondrously brilliant and often startling effects. This transition from "grave to gay," we also find in Lawrence, though in a different line of art; he having begun by an imitation of Rembrandt and the old masters, and eventually become a painter of colours as they are.

28. *Impudence*.—*G. Wallis*. "Black it stood as night."—We cannot admire the fashion of thus victimising lines of our great poets, however wittily the *double entendre* may be made out—and here there is nothing to palliate the offence; the line being taken in vain into the service of a chimney-sweep astride upon a turnstile, through which a gaily-attired damsel is desirous of passing.

30. *Going to Market*.—*J. Stark*. A very simple, natural, and, consequently, pleasing composition. A Peasant Girl and Donkey laden for market, coming over a moor; and so faithfully representing real life, that we may imagine we have met with the very group in some of our wanderings.

35. *Near Beddgelert, North Wales*.—*T. Creswick*. A superb amphitheatre of mountains, girt with clouds, and half curtained by a light mist, through which the vale and stream below gleam softly out, form the distance and mid-ground of this beautiful picture. The wild heath from which the view is gained, and the figures in the foreground, forming a fine, though, perhaps, too sudden, contrast to the extreme delicacy and silvery softness of the far-off scene; which gives us one of the most beautiful, though most transient, expressions of these grand features on nature's ever-glorious face,—

"Soaring, snow-clad, through their native sky,
In the wild pomp of mountain majesty!"

39. *Smithy at Whitnash, near Leamington*.—*H. Wyatt*. It is a strange folly and weakness of our nature that we cannot be content with doing one thing well, but must attempt others, as it would seem for the express purpose of being foils to ourselves. Why does Henry Wyatt perpetrate tiled smithies, and ducks by a pond, but to shew us he is not always the great and graceful painter we are wont to find him?

43. *The refractory Model*.—*W. Kidd*. Excellent, most excellent, is this humorous little picture! An artist at his easel is painting the portrait of a Donkey, who is held in the middle of a not over large studio; and, from the progress made, we may suppose has hitherto conducted himself with becoming decorum. But a sudden fit of friskiness seems to have seized him, and, plunging out, he is making war upon plaster Apollo's and Venus's without mercy; while the unhappy painter flings up his arms in an agony of horror, and the landlady peers in at the door to discover the cause of disturbance. The figures and accessories are as well painted as they are cleverly designed.

47. *Magdalen*.—*H. Wyatt*. Very exquisitely painted: the flesh particularly clear and beautiful, and the head fine and gracefully turned.

48. *Portrait of Miss Gronow.*—*F. Y. Hurlstone.* Few pictures in the exhibition can compete with this in nature, interest, or beauty. The head of the rosy, laughing, bright-eyed, and black-haired child is exquisitely painted; and the donkey on which she is carelessly mounted, seems fairly stepping from the canvas. A young, rough, shaggy, coltish-looking creature is this same steed, painted up to nature in every point of form and character; with a spice of the hereditary obstinacy of his tribe written on his long-eared visage. The picture reminds us of Miss Mitford's writings; it is so worthy of the graphic pen with which she would beautifully sketch both child and donkey, in one of her delightful village scenes. This is the finest of Mr. Hurlstone's works we have yet seen, and we hope to greet many more of like feeling and excellence.

49. *Duncan's Horses.*—*J. Ward, R. A.* A most extraordinary illustration of a passage in Macbeth, act 2nd, scene 4th, where Rosse describes the escape of Duncan's horses, and their eating each other. The animals, individually, are finely designed, and in the most difficult positions; but, as a whole, the picture is monstrous. The encounters and combustions of the heavy stone-like clouds above, are full as strange as the civil war among the steeds below, who are racing, rolling, and devouring in every direction, and in such troops as give one a splendid notion of poor King Duncan's stud. The landscape is laboriously painted—but highly fantastic and absurd.

51. *The Ornithologist.*—*H. Wyatt.* Here our artist is in his element, and the grace, beauty, and interest of this little picture makes us yet more regret that Whitnash Smithy should ever have led him from his own particular path in art.

56. *Portrait of a Lady.*—*E. Coleman.* White satin dress, and a red geranium by way of taking off the chill. (Had not Partridge a lovely picture in the last Exhibition, arrayed in precisely the same costume?) The head of the lady is painted with great clearness and delicacy.

57. *Scene near Axminster.*—*F. W. Watts*; and 31, *Heath Scene*, by the same artist, are two faithful and pleasing transcripts of familiar scenes, in which, after all, lies the true pleasure of pictures. Mr. Watts's landscapes are clear, sparkling, dewy-looking scenes, with all the fresh and cheering look of nature.

58. *A Lady in a fancy Costume.*—*Mrs. Joanna Cox.* "So full of shapes is fancy, that it alone is high fantastical." The fair artist seems partial to the fancy line, for we have a "Portrait of a Turk, late tailor to the Dey of Algiers," in a very fanciful costume indeed. But the triumph of Mrs. Joanna Cox in the temple of fancy, is "A Female weeping over the Tomb of her Lover," whom we, very unsentimentally, mistook for a cook-maid suffering from tooth-ache, leaning on the kitchen dresser, with a blue apron over her head.

67. *Portrait of a Lady.* *J. Hollins.* We can scarcely believe this to be painted by the same hand as the lovely portraits which Mr. Hollins exhibited last year. It is harsh in colour, and utterly void of taste in arrangement. The likeness, we understand, is correct.

68. *Portrait of the Rt. Hon. the Earl of Aboyne, &c. &c.*—*J. Hollins.* A much more creditable production than the former portrait; but still far off what Mr. Hollins *has* achieved.

69. *Independent of a Vote*, and 76, *Soliciting a Vote.*—*R. W. Buss.* Two pictures of election scenes, in the very broadest style of—we had almost said—caricature, which they are not, but very humorous and racy. The sly, low cunning of the lawyer's face soliciting the vote; the eager, anxious look of his companion, with hand in pocket for the bribe, if likely to be accepted; and the independent, care-for-nothing expression of the elector, who gives a sneering denial without so much as rising from his chair, are all admirably characteristic;—and the wife, eyeing the intruders with a look of scarcely suppressed abuse, completes the story of the picture. The companion, 69, represents the chairing, or rather coaching, of the member, among a motley group of boisterous and noisy constituents. The execution of these pictures is careful and spirited.

72. *Malvern.*—*H. H. Lines.* One of the gems of the collection; and a picture we should value, were it ours, as much as if it bore the name of Gainsborough instead of Lines. The lane, opening under the noble trees near the foreground of the scene, is perfectly deceptive: after gazing for a moment on its green and shady hollow, you are thinking about strolling down it, and looking over the stile, where the children stand with their donkey, into the golden corn-field to the left; beyond which, the church tower peers over the trees, and behind it the rich, and swelling, and majestic hills rise, knoll above knoll, till they commune with the upper air,—and you wish yourself on the green summit to look around, and above, and beneath:—around, on the mountain tops and the sailing clouds; above, into the clear blue of the summer sky, where the birds are merrily flitting and circling round; and beneath, upon the busy and seemingly *happy* world below, whose faint hum rises like music on the ear. Stay—where are we? Oh! at Malvern—Henry Lines's Malvern. But in sooth, his pencil's magic had conveyed us in imagination to the reality—for his picture is scarcely less than real. It is the very poetry of painting; and right glad are we to greet its creator again in the Birmingham Exhibition.

73. *Greek Pirates landing their Captives.*—*C. H. Seaforth.* A fine and interesting composition; the distant view of rocks and coast to the left of the spectator, is very aerial. The figures are spirited, characteristic, and well painted.

80. *Portrait of a Lady.*—*J. Phillips, R. A.* Every part of this portrait is exquisitely finished; the head painted with a rich, yet delicate, brilliancy, and most pleasing expression; and the position of the figure perfectly simple, easy, and graceful. The several parts of the drapery are fac-similes of the materials. The blond lace and head-dress are most elaborately copied.

86. *The Chivalric Vow of the Ladies and the Peacock.*—*D. Mac Clise.* This wondrous picture is in itself an Exhibition. About eighty figures are introduced, and though forming an infinity of

groups, complete in themselves, the general effect is perfect and harmonious. The scene thus nobly represented, is the ancient chivalric ceremony of the knights making a vow, at a grand festival, at which, in times of yore, the peacock performed an important part. "Between the courses of the repast, two damsels entered the hall, advancing to the sound of solemn minstrelsy, and bearing the peacock roasted in its feathers, in a golden dish, to each knight in succession, who made his vow, and sanctioned his resolution by appealing to God and the Virgin Mary, the ladies, and the peacock. The dish was then placed on the table, and the lord of the festival deputed some renowned knight to carve it in such a manner that each might partake."—*See Saint Palaye and others, Histoire de Chivalrie.* In the centre of the picture, stand the two fair damsels with their glittering burden: each perfectly beautiful: one dark,—the other fair-haired. The splendid plumage of the peacock, in which every feather is painted with ornithological exactness, yet grand effect, droops over the golden dish to the floor of the dais, or platform, on which the ceremony is performed. In the act of taking the vow, stands a knight, completely armed, save the helm; with his sword raised over the peacock, and the lady of his love, leaning on his shoulder, looks down towards an attendant, who kneels to fasten on the spurs. Another fair and graceful dame, gorgeously appressed, (as are they all) assists at the ceremony. To the right is a group of two knights and their dames, shewing well by contrast: the first, merrily laughing at the gay and sportive creature who is tying a scarf over his armour; and his companion well-nigh as sorrowful as the fair girl who is weeping on his neck. In the one corner of the picture sit the old harpers and other musicians, whose varied faces and figures are a study in themselves. Opposite to these are some fat, sleek monks, evidently enjoying the good fare which the festival gives them, and luxuriating in idleness, ease, and gluttony. Along the well-stored tables are ranged knights and ladies,—the coquette, the demure, the gay, the grave,—each playing her part, and looking her loveliest. Among the most pleasing is a young mother, holding her fair boy upon his father's knee, while he plays with the warrior's sword; at their feet lie the shield and helmet, in the painting of which, and of the chief knight's armour, the art seems to have excelled itself: one would almost believe that Mac Clise, together with the chivalric lore of olden times, had gained some knowledge of their "gramoury," and had turned wizard; for such a wonder-working pencil seems to possess more than mere common cunning. Nor are the countenances of the ladies, or their brave and brilliant attire, less exquisitely delineated: and the proud war-steeds, which, with pranksome curvet and arching neck, are pacing through the castle court, are each perfect in form, and varied in position. But it is an useless task thus to catalogue, as it were, the materials of this magnificent work,—it is, indeed, "describing the indescribable."

87 *Landscape.—Composition.—Barrett.* Very fine; but to our

taste not nearly so beautiful as his small water-colour gems of sunsets and twilights.

98. *Frigate entering Portsmouth Harbour*.—C. H. *Seaforth*. The frigate is entering the harbour, she is going along gallantly, and her boat rides over the waves in her wake so buoyantly, that you may almost think you hear them ripple against her side. The sea is worthy of Stanfield; and the coast accurately drawn and effectively painted.

101. *Landscape*.—*Distant View of Warwick*.—*Cattle in the foreground*.—T. Baker. A clear, sunset-tinged, twilight sky above,—noble trees lifting their stately heads high into the calm air, and a most *English* foreground of meadow land, occupied by beautiful cows, worthy of Cuyp. The opening in the wood shews the town of Warwick, with its church and castle towers standing out against the golden sky behind, and beautifully closing this very lovely picture.

110. *Shall I?*—H. Wyatt. Fair lady, we answer *yes*: for your query evidently concerns the proposal-like letter in your hand; and sore grief would a refusal bring to one who has dared to love such beauty. This is another of Mr. Wyatt's *own* pictures, in his own graceful and excelling elegance of design and execution.

112. *Rocky Coast, with Smugglers*.—T. Creswick. A scene, which, for its equal beauty, though extreme contrast, we would like to place side by side with Henry Lines's calm, and sunshiny, and happy "Malvern." Here, the rough and tempestuous sea dashes against the high steep rocks, fringing their hoary sides with angry foam; and the brawling torrent, rushing from the mountain-top, plunges headlong down the deep and wooded ravine, as if in mocking rivalry of its ocean neighbour. The stormy sky and skeleton-like trees, bending in the blast, give a strange and wild reality to the scene; which is indeed a fit haunt for the desperate and daring beings with whom the painter has peopled it.

116. *Interior with Monks*.—111. *Interior with Nuns*.—E. Pritchett. Two small pictures, wherein the architecture of the buildings is very finely painted.

123. *Curiosity*.—Bradley. A very fine picture of a girl, very much in the manner of Sir Joshua Reynolds.

130. *Battle Abbey, distant view*.—T. Creswick. Looking from a high hill, we command a most extensive and beautiful prospect over a richly-wooded and finely undulating country, with Battle Abbey to the right; its massive walls and towers rising from the embosoming wood, and painted with the lightness and delicacy of touch so peculiarly beautiful in Mr. Creswick's distant views. There is a silvery airiness in his landscapes, which we rarely find in those of any other painter.

131. *Cymon and Iphigenia*.—G. Patten. Often has this subject been attempted, but now, for the first time, is it worthily achieved. Painted on a grand historical scale, with the figures life-size, and the execution of every part most admirable. Iphigenia, just awak-

ing and turning towards Cymon her beautiful and expressive face, is a figure of unconstrained and perfect loveliness. The flesh is exquisitely pure and brilliant, and seems more fair from the bronzed hue of Cymon, whose bending figure is much shadowed, and the swart skin of a Nubian slave, who is still sleeping near her mistress. The rich, glowing effect, and appropriateness of the back-ground, add, in no small degree, to the fascination of this splendid picture.

135. *Deer-stealer*.—*R. T. Bott*. With Mr. Bott's dexterity of touch in *painting* his subjects, it is much to be regretted that he does not combine more correct drawing. The limbs of the figures in this picture are distorted and ill-proportioned.

136. *Portrait of a Lady*.—*W. Radclyffe, jun.* An extremely natural and pleasing portrait. We are glad to find that Mr. Radclyffe is painting other subjects than the very ripe and tempting fruit which he so much excels in pourtraying; but which should not occupy his entire attention.

139. *Hay-harvesting*.—*G. R. Lewis*. We should call this picture "Playing at Hay-making," for the company are evidently nowise disposed for work. It looks very much like a "rustic scene" in a London Theatre.

146. *Rustic Conversation*.—*T. S. Cooper*. A road scene, very excellently depicted: the trees in the centre of the picture are finely grouped, and painted with truth and freedom: the pool to the left of the spectator is a perfect transcript of nature. The figures are skilfully introduced and well drawn.

147. *Portraits of two Children of Mr. Thomas Lane*.—*R. T. Bott*. Tastefully grouped, and the drawing superior to the former pictures we have noticed by the same artist. The dog is well painted and spirited, though somewhat too boisterous to be held in so slight a leash.

156. *Haidee and Don Juan*.—*J. King*. One of those proofs of a poet's popularity which his memory and admirers could well spare; feeling more honoured in the breach than the observance. However the "unco' guid" of this externally starched age of ours may libel poor Haidee's *morals*, they might "do justice to her *figure*."

IN THE ANTI-ROOM,

"The company is *mixed*: the phrase I quote, is
As much as saying, they're below your notice:"

which, however, would be a very hasty and illiberal opinion: though the appearance of busts, models, miniatures, small oil-paintings, water-colour drawings, and engravings, would make it seem like the medley-collection of fragments remaining after the general division.

169. *Lolah*, by *J. Bostock*, is a very lovely imagination of this Byron-beauty, "dusk as India, and as warm," gracefully resting her fine head and glowing face against a cushion, while she seems

languidly to listen to some harem-gossip. It is a beautifully designed and finely executed drawing.

171. *Venus*.—*J. Burman*. In our younger days, we held the ancient classical faith, that Venus rose from the sea; but we suppose the school-master, since he came abroad, has broached some new doctrine, to which Mr. Burman has become a convert,—for he makes the fair Goddess of vegetable extraction, having painted her as emerging from a semicircle of green leaves, the originals of which are not in our botanical collection.

175. *Hero suspending the Lamp for Leander*.—*Miss E. E. Kendrick*. On referring to our catalogue we find this explanatory title; but until then, the lady appeared, to our unlearned eyes, to be firing a sky-rocket.

176. *Portrait of Mr. J. Harding*.—*F. T. Lines*. As a perfectly accurate portrait, alone, this deserves our highest praise:—but it is likewise a finely drawn and beautifully coloured head. 195. *Portrait of a Naval Officer*, we do not admire so much; it is on a smaller scale, but still a very fine and clever drawing.

196. *Absent Thoughts, or the Lover's Miniature*.—*J. Cooke*.—*Persons* may be absent, but *thoughts* cannot,—they are ever with us; and from the elaborate toilette of the young demoiselle here depicted, we should suppose the lover himself not far off. We would respectfully enquire what has become of the lady's right side?—because though she may have lost her *heart*, we see no cause for the abduction of the *liver*. The gigôt sleeve can, perhaps, give some account of the missing proportions. We would also hint, that a neat and careful young lady would prefer depositing a white satin bonnet on the table rather than the floor, where its towering plumes look very like the steam from a tea-urn. The vase of flowers introduced, is gracefully and effectively painted.

198. *Temple of Vesta, Rome*.—*J. A. Bell*. The only fault in this admirable drawing is, there is too little of it. The style and feeling of the thing are so good, we would have had them on a larger scale, where they might be better shewn and appreciated.—There is a delicacy and quiet harmony about the whole scene which is very delightful, and suits well with the by-gone glories of the ruined fanes, and the twilight sky.

211. *Bust of Master E. R. Tindal*.—*P. Hollins*. And

216. *Bust of T. Villiers Lister, infant son of T. H. Lister, Esq.*—*P. Hollins*. Both worthy the well-earned fame of our eminently-gifted townsman—natural, and finely executed. So is also 217, the *Bust of Henry Earle, Esq.*, extremely good—character, spirit, position, all perfect. Yet we look for more from the sculptor of Mrs. Norton, Medora, Zephyrus, and the half-divine Child and Flowers, of last year's exhibition, than mere *portrait-busts*, however good.

257. *Wood-walk, Leamington*, and 261, *Lane Scene, near Stratford*.—*J. Baker*. The former scene we know well, and instantly recognize Mr. Baker's most faithful portrait of it. The Lane Scene is one of the same family, in style and nature; though if we endea-

your to discover a fault, it will be that of too uniformly sombre or somewhat *heavy* a tone about the trees—requiring a strong light to call up the real beauty of the picture. 283. *River Scene, North Wales*, by the same artist, is a most lovely painting of a beautiful spot, with the same dark hue on one side, but gleamy sunshine on the other, which relieves and contrasts with it. In all Mr. Baker's landscapes, the pureness and depth of his blue skies, and floating airiness of his cloudy ones, are great beauties, and his figures and animals are always introduced with skill and judgment. He is the Bloomfield of landscape painters.

259. *The Alchymist*.—*J. I. Williams*. A very spirited and clever little picture. The old enthusiast pouring out his precious compounds, the attendant watching the mystic cookery over the fire, and the many and divers chattels in the apartment, are touched in with a light but skilful pencil.

264. *Jonathan Martin, setting fire to York Minster*.—*Henry Harris*. Mr. Harris has fairly astonished us, high as was our opinion of his talents, by the production of this superb and wonderful picture. It has rarely yet been our good fortune to behold anything approaching it in grandeur or pictorial delusion. From the title, it may be imagined to be a glaring, fiery, combustible affair: but the great subject was in good hands, and is worthily executed,—all is solemn, grand, and calm. The work of destruction is just begun—the prayer-books and pulpit cushions are slowly burning in the foreground, and sending up long curling wreaths of smoke, which partially curtain over the glare, and fling alternate light and shade on the dark and polished oak carving of the opposite stalls. Looking on, down the long and fretted aisle, the moon-beams are seen falling calmly and coldly on the tall columns in strange and beautiful contrast to the red light and smouldering fire going on above,—and, closing the view, the richly-hued stained window, with its delicate tracery and storied panes, gleams softly through the intervening mist and smoke, completing one of the most perfect, wondrous, and delusive scenes ever created on canvas. We do not say, we hope soon to greet Mr. Harris again on like ground, because we cannot spare a York Minster to be burned every day; but we do hope he will go on zealously, and prepare many pleasant surprizes for us equal to that we have thus feebly attempted to acknowledge.

275. *The Installation of Captain Rock*.—*Daniel Mac Clise*.

“There is an attempt in this picture to associate the ridiculous with the sublime; the Artist thinking he might represent what appears so often in Irish story, either acted or written. So, in the centre of this picture, there is a serio-comic group of “The Installation of the Captain Rock,” who, while the hunchback raises himself on the back of one of the motley assemblage to crown him, in a mock-heroic manner, vows on the body of a deceased relative, perhaps his predecessor in outlawry, to revenge his death; others engage in the same act according to their characters and temperament.—Above their heads, a group is descending a broken portion of the wall, the only access to the interior of the ruin, and bearing in a wounded man, supposed to have been engaged in the affray which has proved fatal to his Chief.

On the left of the spectator, a country schoolmaster addresses a group in an emphatic manner, who are seated at a rude table engaged in various ways, but all relating to the chief business of the picture. On the right, an old pensioner is teaching a youth how to present a blunderbuss; addressed to the eye of the spectator—a group of girls are anticipating the report—two figures, one illustrating active, the other passive, drunkenness, complete the group. The one is what they term in Ireland a baccagh, or mock-lame beggar, who is supposed to have dispossessed himself of his pretended helps, but real incumbrances, on this great occasion, and is shewing, by whirling his crutch and leg, his willingness to join in whatever is about to be enacted.”

We extract the foregoing description from the catalogue, but it can give no adequate idea of this surpassing picture; which, as a representation of present realities, may prove more interesting to the general spectator than the romance and chivalrie of the “Vow of the Peacock.” In fact, we are much inclined to pronounce this wild Irish scene, the finer composition of the two. In both, the exquisite beauty of all the female heads, is remarkable; every variety of countenance and expression is given with a grace, feeling, and spirit, we have never yet found united. The assemblage is represented in a ruined church or abbey; and faithfully, though strangely, blended are the passions, habits, and prejudices, of the hot-tempered and superstitious Hibernians. In the foreground of the picture lies a female figure, stretched upon a grave, and apparently weeping. At the head of the grave the *holy* symbol of a *cross* is erected; and immediately behind it are flung down, in close companionship, a good corpulent bottle of the “crathur,” and a musket!—priestcraft, drunkenness, and murder! How sadly appropriate are the emblems! Mac Clise is not a *painter* only—he is a philosopher and a moralist. The infinite variety of faces, from the smiling and innocent child, nestled, in blessed unconsciousness, at its mother’s breast, through every gradation of age and temperament, to the wronged, daring, and demoralized leaders of this half savage band, show the result of study and mental powers far beyond the common range of minds. The humourous is mixed with the tragic, in strange and startling contrast. Kneeling at the head of the corpse, in the centre of the picture, is a girl, weeping and clasping her arms frenziedly round the neck of her deceased relative; while close beside sits an impersonation of “Paddy from Cork, who buttoned his coat behind, to keep him warmer.” Among the schoolmaster’s auditory, the half-idiotic boy who seems drinking in every word, in blind and implicit faith, is admirable; indeed, every figure is a romance—the true romance of real and stirring life: and, to do any thing like justice to the picture, we should extend our notice to a three-volume illustration. The girl drawing moustaches on her lover’s face with a burnt cork—the one pretending fright at the expected musket-shot—the young wife, or bride-elect, tying a green sash round the waist of the newly-installed Captain—and several more fair forms and faces in this motley group, are perfectly beautiful.

281. *Bribery and Corruption.*—C. Landseer. An illustration, worthy of the subject; admirably conceived and beautifully execut-

ed. The interview between Jenny and Halliday, in Scott's "Old Mortality"—

"And so, if you will promise to come alone the next time"—

"May be I will, and may be I winna," said Jenny, "but if ye get the dollar ye'll like that just as weel."

"I'll be d—n'd if I do," said Halliday, taking the money however."

The figures are spirited, characteristic, and finely painted, the female heads especially pretty, and the costume and accessories correct and well arranged. It is a very excellent specimen of a very good and interesting class of pictures.

286. *Meditation.*—*H. Wyatt.* A model of colouring,—the flesh most exquisite,—so very pure, clear, and delicate; and the whole figure and sentiment of the composition chaste, simple, and calm,—so very femininely beautiful. The soft, glossy, brown hair falling on the neck, the delicate hands and arms, and the angelic expression of the face; with the subdued, yet rich, colouring of the drapery and background, leave us nothing to wish changed or amended in this truly delightful picture.

295. *Nightingale Lane, leading to Holland House, Kensington.*—*T. C. Hofland.* Very like the spot; but the trees very much resemble sea-weed specimens, nicely spread out.

303. *The Ferry.*—*W. F. Witherington, A. R. A.* Welcome to thee, Witherington!—ever welcome are thy sunshiny and clear skies, thy rustic merry-makings, and glad, light-hearted-looking peasants. And now well-met at the *Ferry*, a scene right worthy of thy delightful pencil. A pretty, trim, village maiden is sitting on the old white horse, quietly waiting, with an aged couple, whom we may suppose her parents, the next arrival of the ferry-boat, which a young angler is hailing from the bank; and a bright, beautiful child, resting beside the poultry-baskets, completes the group on our side the river. On re-considering the party, we are inclined to think the fair equestrian the mother of the pretty child; which makes the picture still lovelier. The heads of the old couple are finely painted, and the whole group come out in strong and beautiful relief from the landscape and sky behind. Every part of the costume, baskets, &c., is depicted with the most perfect fidelity and good taste.

313. *View on the Coast of the Isle of Wight.*—*T. Creswick.*—Creswick again, and in all his glory! (We could almost avow a preference for this little gem, before the Smugglers and Battle Abbey. Yet it is hard to decide, all are so perfect in their beauty.) The range of sea-girt cliffs, extending from the mid-distance towards the horizon, must equally delight the poet and geologist; they are so beautifully and scientifically natural. The beach, and silvery sea,—the fisher's cottage, and the spirited figures in the foreground, are all in true keeping and taste!

IN THE WATER-COLOUR ROOM,

We find many exquisite drawings; from among which our confined limits will only allow us to select a few for individual notice. Mr. Charles Birch, we see, has contributed some of the gems of his superb collection, by Cattermole, Cox, Roberts, Prout, Barret, Stanfield, Lewis, &c.

323. *Drop too much.*—G. Lance. Admirably expressed, and painted with great freedom and breadth. The red-night-capped old carouser is a perfect picture of animal enjoyment.

340. *Pass of Aberglaslyn.*—E. Watson. An extremely spirited and breezy-looking sketch. The trees lightly and effectively touched, and the water-fall's foam and scattered spray well described.

342. *Penmaen Maur, Caernarvonshire.*—D. Cox. The dark and stormy aspect under which the painter has represented this wild and magnificent scene, suit admirably with its stern and sterile character. The drawing is a very fine one, and, together with many others of equal beauty in the present exhibition, is engraved for Roscoe's *Wanderings in North Wales*, now publishing by Messrs. Wrightson and Webb, of Birmingham.

346. *The Ghiga Palace at L'Arricia.*—J. D. Harding. One of the illustrations of the Landscape Annual; a very beautiful, and truly Italian scene, with clustering vines and pretty peasant girls in the foreground.

348. *The Alhambra.*—D. Roberts. Of all the wondrous palaces of the earth, the Alhambra seems to hold the foremost place in our imaginations,—and well may it: the scene of so much splendour, chivalry, triumph, and—desolation! The dwelling of the old Moorish sovereigns, the witness of their magnificence and might, the luxurious and paradisiacal shrine of beauty, love, and romance. The last stronghold of its vanquished monarchs, and the yet unperished memorial of their power and splendour. Well might we exclaim with Shelley—

“Where is the fame
“Which the vain-glorious mighty of the earth
“Seek to eternise?”—

when all that time has suffered even these mighty ones to bequeath unto us, is—a name—a story—and a ruin. The drawing before us is from the “Hall of Judgment.” The walls and roof of which are most richly ornamented with arabesque and pendant fret-work, still in tolerable preservation.

358. *Brigands Gambling.*—Cattermole. One of the scenes in which Mr. Cattermole is most successful. The hardy, desperate, and picturesque-looking figures of bandits and their compeers, rise beneath his pencil in all their energetic and fierce bravery of form and manner.

360. *View in North Wales.*—H. Harris. Very much the character of the scenery about Beddgelert. The mountains have a fine

rich effect of light and shade ; and the winding road and brawling stream are painted with great truth and beauty.

361. *Belinda*.—*Miss Sharpe*.

“ This nymph, to the destruction of mankind,
“ Nourish’d two locks which graceful hung behind.

The adventurous baron the bright locks admired,
He saw, he wished, and to the prize aspired—

Just then Clarissa drew, with tempting grace,
A two-edged weapon from her shining case ;
He takes the gift with reverence and extends
The little engine on his fingers’ ends ;”—

POPE’S RAPE OF THE LOCK.

Miss Sharpe’s favourite subject is here treated on a larger scale than we have yet seen it, and most beautifully painted in every part. The figures correctly and gracefully drawn, and *draperied* with grace and richness :—yet is the picture far from our taste. We cannot admire the shoals of little pink-skinned imps which are crowding around *Belinda*,

“ And, flying ’mong laces, and gauzes, and lawns,
“ Come floating about her like so many prawns.”

Over her head they are plunging and frisking like motes in the sunshine, only very plump and corporeal ; and they literally swarm on the hem of her garment, forming a flouncing termination thereto : while a trio are bathing in Miss *Belinda*’s cup of warm coffee ! Others are swinging in her hair, and the whole troop of tiny *sans culottes* exhibiting the most ingenious variety of attitude and contortion, that can enter into the fancy of man to conceive, or the freakish whim of fair lady to execute. In Pope’s description of the sylphs attendant on *Belinda*, we find them mentioned as

“ Transparent forms, too fine for mortal sight,
Their fluid bodies half dissolved in light.”

It, therefore, seems a stretch, even of a painter’s license, to clothe these ærial beings in such full, florid, and substantial shapes of flesh and blood as they here appear in. The light sylphs of Pope were never intended to be impersonated by plump-bodied Cupids : at least, such is *our* opinion of the ideal portion of this highly-finished picture, which, in every other respect, we very much admire.

385. *Seville*.—*Procession of the Host*.—*J. F. Lewis*. The priests, bearing the sacred emblems, are pausing opposite one of the Madonna shrines, which so frequently occur in Spanish cities ; and all the passers-by and inhabitants are reverentially kneeling around.—The pretty mantilla’d belles gracefully bending, with evidently as much regard to beauty as piety ; while some of the rougher sex perform the required obeisance as a mere matter of ceremony ; and others with all the fervour of enthusiastic devotees. The perspective view of the street, terminated by a lofty tower, is very finely

depicted ; and the colouring and arrangement of the whole rich and effective. We could wish that our limits allowed us to dwell longer on this and many like productions.

397. *Scene on the Moors of Ramrock, near Inverozan, Argyle-shire.—Copley Fielding.* A wide, sterile expanse of country, richly and, we may say, *poetically* painted, with only two figures, but they are good and appropriate ones. A horseman inquiring of an old Scotch shepherd his way across the heath, and pointing to the cloud-wreathed mountains bounding the view ; between which and the foreground, intervenes a valley, from whence long wreaths of smoke are slowly rising. The picture is a truly *grand* one. 335. *View of Inverary.—By the same Artist.* Is extremely beautiful, and, as combining more variety of scene, will, by many, be preferred to this, in our estimation, far nobler and more interesting picture.

410. *The Port of Conway, North Wales.—S. Lines, sen.* The splendid sunshine of this beautiful scene is perfectly dazzling ; and its effect on the landscape, especially in the foreground, is given with a rich breadth and harmony of colour, according well with the subject. The castle, bridge, and sea view, are faithfully represented ; and the busy sail-menders in the foreground, and the boats moored at the quay, animating the picture, forcibly recal the reality to our recollection.

We here close our remarks, and regret that the allotted space has not allowed us to make them so full and satisfactory as we could have wished ; many highly-meritorious works remaining wholly unnamed, and those we *have* particularized, much more briefly described and reviewed than they deserved. Our aim has been to give a sketch of the *general* character of the exhibition, by mentioning as many works as possible, rather than confine our notices to the comparatively few stars of metropolitan celebrity, which, great and beautiful as they are, ought not to take the lead, in point of interest, in an institution formed for the encouragement and benefit of provincial artists.

MEETING OF THE BRITISH ASSOCIATION.

THE fifth Anniversary Meeting of the British Association for the Advancement of Science, according to previously settled arrangement, was held last month, (August), in the city of Dublin, and was confessedly, in point of numbers, rank, and talent, the most brilliant of any that have preceded it. A two-fold benefit in this case, was fully answered,—it brought together scientific and learned men of all countries, and set at rest those doubts which sometimes

arose in the minds of even the most intelligent and liberal, of the high ground on which science and general knowledge take stand in the sister kingdom. Not only was the character of the warm-hearted, open, liberal, and confiding Irishman fully exemplified in all its ramifications, but the travellers found it united with talent and lettered distinction of the first order. We do not hesitate to affirm that more has been achieved in this national interchange of intellectual and social fellowship,—more has been accomplished to give a clear insight into the Irish character, without prejudice or partiality,—than all the legislative measures which have yet been suggested or adopted for that beneficial end. To judge of a country you must see it—to appreciate its inhabitants you must mingle with the several classes, casting off all home-spun pride and affectation; a thorough knowledge of the people is not gained by a formal introduction to a few exclusives of which the Court is composed,—the traits of national character, its bright and sunny, and its dark and baleful indications, can only be correctly gathered by a direct and personal observation of society in every grade. Now will our literary countrymen know what Ireland really is,—of what materials her sons are composed. They have now had an opportunity of judging by the unerring test of experience; and the consequences will be a future reciprocity of generous and kindly feeling, more extensive and useful than ever yet contemplated.

For many previous days, and particularly on the Saturday before the appointed day of meeting, so popular was the excitement, that crowds of strangers from all parts poured into Dublin; English and Scotch professors, philosophers, poets, and literary characters of every order. The Examination Hall and the Courts of Trinity College, were on Monday crowded with members of the Association, as well as with strangers, who could not obtain admission into the densely-crowded Theatre of the College. So many candidates presented themselves, that the local council was compelled to place some restrictions on admission, and to refuse, unless under special circumstances, all applications made after Wednesday, the 5th of August, by persons residing in Dublin. The consequence was, that at least four hundred were disappointed, but the necessity of the limitation was so apparent that no complaints were made. Ladies' tickets were also restricted in number; and the inflexible adherence of the council to the regulations, necessarily produced many awkward embarrassments. The arrangements made by the reception committee were excellent, and they were greatly aided by the gentlemanly and liberal spirit of Sir John Tobin, of Liverpool, who sent over his steamer, the *William Penn*, with a large party on Friday; and this courtesy and attention was extended to a numerous body of the members who embarked on Sunday. A deputation from Dublin received the passengers by this vessel at Kingstown, whence a train of carriages, granted to the Association by the Railway Company, conveyed them to the city. Within the walls of the College accommodations were provided for a considerable number of the guests,

and arrangements were made for their breakfasting and dining together in the College Hall, by which the intercourse between the members was much facilitated. In the list of names of members admitted on Saturday, were to be found men of every creed, sect, and party,—protestant clergymen, catholic priests, and dissenting ministers,—all anxious to gain a respite from agitating controversies, and enjoy a week's repose on the neutral ground of science.

The Examination Hall of Trinity College, which had been appointed as the place of general rendezvous, on Friday and Saturday mornings, from the eagerness of candidates to learn whether they had gained admission, and the general anxiety to get a sight of eminent strangers, presented an animating spectacle. At eleven o'clock on Saturday, the Hall was completely crowded. Sir John Ross, Sir John Franklin, Dr. Coulter, the recent explorer of Mexico, Dr. Dalton, Professors Sedgwick, Phillips, Babbage, Powell, and many other eminent men, were among the throng, evidently enduring some inconvenience, that they might gratify the curiosity they had excited. Moore, too, was paying the tax of popularity, as poet and historian of Ireland, by finding himself the object of attraction whenever he appeared in the streets; and a high compliment was paid him by his being proposed as a candidate by the Provost, without the usual formalities and fees. His nomination was carried in the midst of the most unanimous and enraptured applause. The council of the Association met in the rooms of the Royal Irish Academy, at twelve o'clock; and at one the general committee, which is the legislative body of the Association, assembled to make their preliminary arrangements; when the following officers were elected:—

GENERAL OFFICERS.

President—Rev. Dr. Lloyd, Provost of Trinity College.
Vice-Presidents—Lord Oxmantown; Rev. William Whewell.
Treasurer—Mr. J. Taylor.
General Secretary—Rev. W. V. Harcourt.
Assistant General Secretary—Professor Phillips.

OFFICERS OF THIS MEETING.

Treasurer—Dr. Orpen.
Secretaries—Professor Hamilton; Rev. Professor Lloyd.

OFFICERS OF SECTIONS.

SECTION A. *President*—Rev. Dr. Robinson.
Vice Presidents—Sir Thos. Brisbane; Mr. Baily.
Secretaries—Prof. Hamilton; Prof. Wheatstone.
 SECTION B. *President*—Dr. T. Thomson.
Vice Presidents—Dr. Dalton; Dr. Barker.
Secretaries—Dr. Apjohn; Professor Johnston.
 SECTION C. *President*—Mr. Griffith.
Vice Presidents—Mr. Murchison; Prof. Sedgwick.
Secretaries—Captain Portlock; Mr. Torrie.

- SECTION D. *President*—Dr. Allman.
Vice Presidents—Dr. Daubeny; Prof. Graham.
Secretaries—Mr. Curtis; Dr. Litton. —
- SECTION E. *President*—Dr. Prichard.
Vice Presidents—Dr. Colles; Surgeon General Crampton.
Secretaries—Dr. Harrison; Dr. Hart.
- SECTION F. *President*—Mr. Babbage.
Vice Presidents—Colonel Sykes; Rev. E. Stanley.
Secretaries,—Mr. Greg; Dr. Longfield.

The Royal College of Physicians, on Saturday evening, invited most of the members who had arrived, to a *conversazione* in their library and museum, at St. Patrick Dunn's Hospital,—where discussions on medical subjects are held monthly. Dr. Jonathan Osborne, who was in the chair, read a preliminary paper, and other papers were afterwards read by Drs. Marsh and Montgomery; after which, the company adjourned to supper in the state apartments.—We now give as comprehensive an account of the sectional and other proceedings, in regular order, as our limits will admit.

Monday.—A vast accession of members presented themselves who had arrived in Sir John Tobin's vessel, and in the Liverpool and Holyhead packets. By the judicious arrangements of Professors Lloyd and Phillips, the whole of the sections were in working order at eleven o'clock; but it soon became evident that the sectional meetings would be crowded beyond example. The Physical, Geological, and Medical rooms especially, were completely filled a few minutes after the chair was taken. The sections were opened in the following places:—

A. Mathematics and Physics—The Philosophy School, Trinity College.

B. Chemistry and Mineralogy—Chemical School, ditto.

C. Geology and Geography—Theatre of the Royal Dublin Society.

D. Zoology and Botany—Board-room, ditto.

E. Anatomy and Medicine—Council-room, Royal Irish Academy.

F. Statistics—Divinity School, Trinity College.

SECTION A.—*Mathematics and Physics.*—Dr. Robinson in the chair.—Mr. Whewell read an able paper on electricity and magnetism, on some points of which, however, he was opposed in opinion by Mr. Harris; Professor Powell made an interesting communication on the nature of radiant heat; Dr. Hudson read a paper on the radiation of heat and cold; Sir John Ross on the Aurora Borealis; Mr. Roberts on optical phenomena; Mr. Robert Mallet on a new machine, worked by steam, for separating iron filings from brass and copper filings; and Mr. Russell on floating bodies.

SECTION B.—*Chemistry and Mineralogy.*—Dr. Thompson in the chair.—Professor Davy read an important paper on the protection of metals attached to buoys, and illustrated his statements by a va-

riety of experiments; Professor Kane a paper upon a singular phenomenon of flame arising from coal gas; and Mr. Ettrick exhibited a plan of a new safety lamp.

SECTION C.—Geology and Geography.—Mr. Griffiths presided at the opening of the section, but having to exhibit his own geographical map of Ireland, he resigned the chair to Professor Sedgwick. This splendid map, the result of many years' laborious research, was produced, and its general correctness much lauded. Professor Bryce, of Belfast, remarked on the formation of gravel hills, in the northern counties of Ireland; and Professor Sedgwick, of Cambridge, entered minutely into the geological history of several counties in England, occasionally referring to the observations of Mr. Griffiths, to shew the analogy which was evident between the strata of these counties and different parts of Ireland. The learned Professor here gave an eloquent description of the pursuits which lead the geologist into the wildest and most beautiful scenes of nature, wherein he is continually called to contemplate, in the existing face of nature, the terrible convulsions which gave birth to all the beauty he beholds; or of those awful catastrophes which, devastating all that is lovely within their reach, prepare, by present ruin, new modifications of the sublime or beautiful for the wonder and instruction of remote posterities.

SECTION D.—Zoology and Botany.—Dr. Allman in the Chair.—A paper on the natural arrangement of plants was read by Mr. Nevin, who presented some specimens of new plants found on the western coast of England.—The *Orchis pyramidalis* was found by Dr. Graham at Galloway. Dr. Knapp also found it growing in Fife.—Mr. Babington said, three of the *Ranunculus* tribe were commonly confounded under one—the *aquatilis*, *palustris*, and *sceleratus*.—Mr. Babington also informed the section that Reichenbach distinguished three distinct species, under the head *orchis bifolia*, two of them natives of Great Britain; they were chiefly distinguishable by the form of the anthers, one being more round, the other longitudinal. Doctor Drummond stated the common *Gordius* to be viviparous; when put into the same vessel of water with a common newt, the animal became alarmed, and in a short time the *Gordius* twined round it and killed it.—A communication was read from Mr. Hamilton, of Mexico, offering his services to the British Association, in forwarding seeds and plants, and describing some new plants of that country, one a species of *Solanum*. The *amaryllis* was stated to be an *agave*.—Dr. Coulter doubted this, and took occasion to inform the meeting of a plant, a species of *Veratrum*, not the *Veratrum sabadilla* of the shops, a portion of which was taken medicinally by a person labouring under dyspepsia, so that he could make use of no food, and having at the time to ride thirty miles a day. After the second dose his appetite returned. Dr. Coulter only saw the root and was thus enabled to pronounce the plant not to be the *Veratrum sabadilla*. It is called by the natives the Indian's root.

SECTION E.—Anatomy and Medicine.—Dr. Abraham Colles in

the chair.—At one o'clock Dr. Groves commenced to read a paper on fever. The room was crowded principally by professional gentlemen.

SECTION F.—Statistics.—Mr. Babbage in the chair.—Mr. Maunsell, professor of midwifery to the Royal College of Surgeons, read a paper on the statistics of the Dublin Foundling Hospital, and on child desertion in the city of Dublin, and exhibited a series of tables illustrative of these subjects. Among the latter was an abstract of the registry of the Foundling Hospital for thirty-four years, exhibiting at a view the results with respect to 51,523 foundlings; and also tables exhibiting the average yearly desertions in the city parishes since the close of the Foundling Hospital in 1831. A most interesting discussion followed, in which Mr. Babbage, Col. Sykes, Rev. Dr. Dickenson, Professor Longfield, Dr. Maunsell, and several other members, took a part, with regard to population and the laws of its increase, which Mr. Babbage illustrated by returns obtained from Prussia, Germany, parts of England, and some other countries. Some of the results, particularly with regard to the laws of the proportion of the sexes, were very curious and extraordinary. A report on the Glasgow Bridewell, by Dr. Cleland, of Glasgow, was distributed among the members, and the section adjourned to the following day.

About three hundred members of the Association dined at the ordinary, at Morrison's. The tickets were issued at five shillings each, the difference being paid out of the local fund. The Surgeon-General presided; but, with the exception of the King and the Association, there were not any toasts proposed, nor, of course, were there any speeches delivered. Coffee was served at half-past seven, and immediately after the members adjourned to the Rotundo, where the first general meeting of the Association took place. At twenty minutes after eight, his excellency the Lord Lieutenant, accompanied by his staff, entered the room, and took his seat on the platform. The noble Earl was attired in the uniform of the Governor-General of Jamaica. The chair was then taken by Sir Thomas Brisbane, the out-going president. Sir Thomas addressed the meeting, and spoke in high terms of the very excellent arrangements that had been made for the reception of the Association—arrangements which did honour to the metropolis of Ireland, and for which the strangers who had arrived were very deeply indebted to those who had done so much to provide for their comfort during their stay (cheers). He then adverted to the great benefits the Association conferred on the cause of science. He (Sir Thomas) was now about to resign the high office to which the partiality of the members, not his own merits, had raised him. Its duties would now pass into far abler hands, and that they would be adequately sustained could not be doubted, when he mentioned that his successor was to be the highly-gifted Dr. Lloyd. He then alluded to the absence of the Bishop of Cloyne, upon whom he passed a high eulogium, regretting that illness had prevented that great man from being present. After

some further eloquent and appropriate remarks, Sir Thomas concluded, amid loud cheering, by calling upon Dr. Lloyd to take the chair which he vacated.

Dr. Lloyd, on taking the chair, addressed the meeting at some length. He vindicated modern science from the charge of impiety, and proved that scientific investigations, so far from throwing doubt on the accuracy of Revelation, tended more and more to confirm it. This must always be the case, as the more we sought after the truths of nature, the more illustrations and confirmations would divine truths receive. 'The God of nature was the God of Revelation; and science, which developed the laws of nature, could not trace anything contrary to revelation. He repudiated the notion that the cause of religion could be served by ignorance; and observed it was an exploded absurdity. Dr. Lloyd continued to expatiate, at considerable length, upon the advantages of an Association which formed a bond of union between scientific men of different countries. He made several apt quotations from Bacon, and concluded by calling on Professor Hamilton, one of the Secretaries, to present the annual report.

The learned Professor read from a paper a very diffuse and very eloquent statement of the origin, progress, and completion of the British Association—its objects, and the mode by which it purposed to effect them, which appeared to give very general satisfaction.

The Presidents of the sections, at the chairman's request, then read abstracts of the proceedings.—Professor Sedgwick addressed the meeting in an animated and effective speech. He observed that the Association had now been assembled between four and five years, and being possessed of a migratory character, objections had been started, that the distance between the successive places of meeting and the necessity of crossing the sea, might operate as a fatal check to the success of the undertaking. These anticipations proved unfounded, and every meeting but proved the increased prosperity of the British Association. The professor then adverted to the munificence of Sir John Tobin, in bringing over the members in his splendid steam vessel, and begged leave to move the thanks of the meeting to that gentleman.—Professor Murchison seconded the motion, which passed amid the strongest evidences of satisfaction.

The meeting adjourned at eleven o'clock.

Tuesday.—At eleven o'clock all the sections again met, and closed at the usual hour.

SECTION A.—*Mathematics and Physics.*—Mr. Whewell's paper was concluded. The subject was the application of mathematical principles to the development of the laws of electricity and heat.—Dr. Allman read an essay on the formation of the cells of plants.—Mr. Snow Harris proceeded to explain his apparatus for making electrical experiments, and put forward some views with regard to the equable diffusion of electricity, which did not meet Mr. Whewell's approbation, upon which a most interesting controversy arose between these two philosophers; Mr. Whewell proving his position

by mathematics, Mr. Harris endeavouring to upset his antagonist's conclusions by experiments. The further discussion was adjourned.

Dr. Read, of Edinburgh, read a paper applying the principles of acoustics to the construction of buildings intended as rooms for public meetings.

Mr. Russell explained the recent improvements in canal travelling, and illustrated the recent discovery that, contrary to preceding opinions, the resistance of the water does not increase with the velocity of the boat.

SECTION B.—Chemistry and Mineralogy.—Professor Davy's paper on the protection of metals was again discussed at some length.

SECTION C.—Geology and Geography.—Professor Phillips, Archdeacon Verschoyle, and Dr. West, read papers. Mr. Babbage was expected to read a paper, for which purpose it was supposed he had left the chair of the statistical section; the section, however, dissolved early, and Mr. Babbage's paper was postponed.

SECTION D.—Zoology and Botany.—This Section was occupied, on the presentation of a paper by Mr. Mackay, in discussing the subject of the bog timber which is found in Ireland.

SECTION E.—Anatomy and Medicine.—Dr. Houston read a most able paper on the provision which nature makes in the inculcating a system of diving animals, to enable them to sustain, without injury, a long privation of breath. He beautifully illustrated this by comparing the vessels of the gannet and the diver—both aquatic fowl; but the former seizing its prey on the surface—the latter adapted to pursue them through the deep.

SECTION F.—Statistics.—This section was occupied principally in discussing the subject of Irish education. In the absence of the Archbishop of Dublin, Dr. Dickenson praised the new Board, and invited the members to visit the model school.

A discussion then followed upon the expediency of solitary confinement, and the length of time that human nature could endure exclusion from the light.

After the sectional business had concluded, a magnificent entertainment was given to the members of the British Association, by the members of the Zoological Society. An encampment was formed on the grounds between the great conservatory and the ostrich house, and under the tents there were laid covers for five hundred. Long before the hour fixed for the *dejeunè*, the illustrious strangers, as well as the members, crowded the gardens, inspecting the various animals, and admiring the style in which this delightful retreat is kept. Shortly after half-past three, his Excellency the Lord Lieutenant, accompanied by three aides-de-camp, arrived, and took his seat at the table, when the splendid band of the 7th Dragoon Guards played "God save the King." After the health of "the King," "the British Association," "the Lord Lieutenant of Ireland," had been proposed and drunk, the Earl of Mulgrave, the Duke of Leinster, and the other distinguished guests, retired to promenade about the gardens.

The attraction at the evening meeting at the Rotundo was Dr. Lardner's lecture on steam-carriages—and it must be allowed that much gratification was the result of the clear and able manner in which he treated the subject. After commenting on their national utility, and on the improvements which were likely to add to their convenience and speed, he glanced briefly at the great lines of communication which are projected: the most forward is the line between Liverpool and London—a railway is to run from Liverpool to Birmingham, and from Birmingham to meet the Manchester railway at a point about half way to Liverpool—this railway will be two hundred miles long; there is a magnificent viaduct over the valley of the Ouse, a mile and a quarter long, and several tunnels—one under Primrose-hill, close to the Regent's Park, of half a mile, another a mile and a half, with several of shorter lengths. By this railroad, even were no further improvement to be effected in the speed of the engines beyond the ordinary rate of travelling, the journey from London to Liverpool would be effected in ten hours; but, as it is probable that carriages built expressly for the purpose of speed, which has never yet been made the object of attention, could keep up during the whole way the rate of 40, 50, or even 60 miles an hour,—which speed has been attained on the Kingstown railway, in experimental trips,—the mail might be conveyed from London to Liverpool in three hours and a half. Dr. Lardner then referred to a map on which all the projected railroads were marked—one from London to Southampton, another from London to Bristol. It was impossible to calculate the moral, political, and commercial effects of these railroads. It was found that the making a railroad trebled the intercourse along the line. The intercourse between London and Liverpool was 1,300 persons a day, as ascertained by stamp returns. The intercourse between London and the three towns he had mentioned was annually a million and a quarter—very nearly the amount of the whole population of the metropolis. Other railroads were projected to York, Edinburgh, and Lincoln; and last—not least—one that he trusted yet to see—the highway to New York; he meant the projected one to Valentia—(renewed and loud cheering). From this the greatest good must follow; steam packets could ply from Valentia to Halifax in twelve days, and thus the whole intercourse with America be brought within the reach of steam navigation; all passengers from the western world would then pass through Ireland, and he (Dr. Lardner) knew of no project more calculated to tranquillize and enrich Ireland than the construction of the proposed railway, in the line of which there is no insuperable obstacle—(great cheering). Our transatlantic brethren had done much in constructing railroads, which were not inferior to ours, as had been erroneously stated—46 were completed, and 137 either completed or in progress; one was now projecting from Baltimore to the vale of the Ohio, which would be 330 miles in length. [The learned Professor concluded his interesting lecture, which was one of the most popular, and the clearest exposition of scientific

principles that we ever had the good fortune to hear, amid the loudest plaudits of the highly respectable crowd which filled the room.]

Wednesday.—At nine o'clock the College of Surgeons entertained the distinguished strangers at their splendid College, in Stephen's-green. The Library, Examination-Hall, and Museum, were thrown open as reception rooms, and the *dejeuné* was laid out in the Board-room, Committee-rooms, and other apartments, in this magnificent building. About six hundred persons were present, and so admirable were the arrangements, that not a wish or want of any of the numerous persons assembled was left ungratified. Mr. Read, the president of the College of Surgeons, who presided, was unremitting in his attentions, and unceasing in his exertions. After the *dejeuné* all the rooms in the College were thrown open for inspection. Shortly before eleven o'clock the members had retired to the various sectional meetings.

SECTION A.—*Mathematics and Physics.*—The first paper read was the continuation of Mr. Snow Harris's highly interesting observations on the use of the proof-plane of Coulomb. Capt. Sabin explained Hanstein's theory of the earth's magnetic curves; and attributed the difference observed in the polarity and dip of the compass needle, in different places, to the existence of two northern and two southern magnetic poles to the earth.—Professor Wheatstone read an account of his experiments on the decomposition of the light of the electrical spark, produced by different means.—Mr. Fox exhibited his improved needle, for observing the dip and intensity of the earth's magnetism at different places. The instrument and explanation appeared to give much satisfaction.—The Rev. Mr. M'Gauley explained his electro-magnetic machine for producing motion, and stated the prospect which was being opened of converting the power of electro-magnets to useful purposes. He also detailed a number of experiments to illustrate the nature of electro-magnetic induction. The novelty and great ingenuity of Mr. M'Gauley's views, and their application, excited the greatest admiration.—Professor Hamilton next made a communication on the nature of algebra, which he defined "to be the science of pure time, as geometry is the science of pure space." He referred to a paper in the last number of the Transactions of the Irish Academy, which contained his suggestions for certain improvements and simplifications in algebra.

SECTION B.—*Chemistry and Mineralogy.*—Mr. Mallet, of Dublin, read a very valuable paper on a peculiar alteration which takes place in the flame of coal-gas by the introduction of air, by means of concealed tubes introduced to the air passage of the argand burner usually employed; the gas burns with a blue flame, yielding no light, and returns downward upon the blast. Mr. Mallet did not attempt to account for the effect so produced. The reading of this paper gave rise to several observations on oil and coal gases. Mr. Connell read a paper on fossil scales, and, from an analysis of them, suggested the means of discovering whether they were those

of fishes or reptiles.—Mr. Snow Harris read a paper on the electricity developed in the evaporation of water. He undertook to prove the electric matter is developed where pure water is evaporated. Mr. Harris exhibited an extremely delicate apparatus, or electrometer, which is affected at twenty feet distance from the plate machine.—The gold leaf was strongly affected, at a distance of several feet, by a glass rod slightly rubbed with a silk handkerchief.

SECTION C.—*Geology and Geography*.—Lieutenant Stotherd read a paper on a small granite district in the county Cavan, surrounded by the transition series, and the primary rocks.—Professor Phillips made a communication relative to the Belemnites.—Professor Agassiz, one of the most eminent of the continental geologists, who spoke in French, observed upon specimens he had seen in France, with the cuttle at the end of the shell filling up the cavity observable in the British specimens; whether this arose from a variety in the species, or what other cause it was not stated. Professor Phillips urged, in eloquent terms, the great advantages of theology, and the importance of examining fossil remains.—Captain Denham, R. N., one of the officers attached to the ordnance survey of Great Britain, exhibited a map illustrative of the estuaries of the Dee and Mersey. He exhibited a chart of these two rivers, and a tide-table, so calculated that the mariner may know any half-hour the banks which might be crossed; thus pointing out the danger, and when it ceased—a matter of great relief to the mariner. Captain Denham complimented the Dock Trustees of Liverpool, for their munificent expenditure, in enabling him to prosecute his object, and dwelt with particular stress on the unbounded liberality of Sir John Tobin. Captain Denham suggested the utility of establishing a half-tide level at each port, to point out the soundings of banks at the half-tide along the continuous shore. The gallant Captain next alluded to the error which had nearly been committed in cutting a canal from Bridgewater to the sea, when there were tides from fifty-six feet level to eighteen feet. He observed that if the distance from the earth's centre to the half-tide level were calculated, it would form a correct base for ascertaining the heights of the land. It would form a matter for consideration if the influence of the sun and moon on the tides were withdrawn, whether or not the water would recede to the half-tide level—(loud applause greeted Captain Denham at the conclusion of his observations). Professor Sedgwick and Sir John Tobin severally offered a few observations complimentary to the exertions of Captain Denham, and of the ability with which the map and tide tables were executed. Professor Griffiths moved the especial thanks of the section to Captain Denham, which was enthusiastically responded to by the crowded and intelligent audience. Professor Murchison said this showed the intimate connexion between geology and geography. If this subject were followed up with that spirited enterprize displayed by such gentlemen as Sir John Tobin, and others, the elurement of land in one place and its increase in another, might yet be defined, and the

rate of that increase and decrease. The communication of Captain Denham is looked upon by all the scientific men, whose opinion is worthy of attention, as one of the most important points on physical geography yet submitted.

SECTION D.—Zoology and Botany.—Mr. Nicol read a paper on the structure of the horizontal branches of the natural family of *Coniferae*; highly interesting and useful in observing fossil remains of vegetable substances.—Dr. Neele made a communication on the seeming hybernation of a land-rail; it was found in Orkney, when brought near the heat of a fire it was restored, but died shortly afterwards.—Some observations, of a highly interesting character, were made by Professor Daubeny, on the circumstance affecting the exhalation of moisture on the leaves of plants—the influence of light and heat together, and of heat without light. A very interesting discussion arose out of this subject.—Mr. P. Marshall read a paper on the zoology of Rathlin.—Professor Allman submitted a plan for the arrangement of plants according to their natural affinities.

SECTION E.—Anatomy and Medicine.—This section held its meeting at the Royal College of Surgeons. A paper was read, by Dr. M'Donald, on the pulse and breathing, from the earliest period of man's existence.—Dr. Harrison made a communication on the heart bones in ruminating animals.—Mr. Houston read a most valuable and interesting paper on hydatids found in the omentum of the axis deer, one of the animals which died in the Zoological Gardens. This curious animal was traced in its progress from its origin to its decay, in the same spot where it originated. The subject was illustrated by beautiful drawings, and altogether attracted the utmost attention, as well from the carefully minute manner in which it was observed, as from the clear manner in which it was elucidated. Dr. Harrison submitted a paper on the entozoa in the human muscle.—Dr. Jacob read a most admirable paper on the mammary glands of the *Cetaceæ*. He had a fine specimen of the dolphin tribe to aid in illustration of his subject.—Dr. Collins submitted a valuable abstract of the registry kept for seven years in the Lying-in Hospital.—He was followed by Sir James Murray, on atmospheric pressure.

SECTION F.—Statistics.—Lieutenant-Colonel Sykes read an interesting paper shewing the rate of wages in Deccan, and the progressive improvements occurring during later years.—Professor Babbage, in accordance with the desire of the meeting, gave his views in reference to the influence of co-operative shops for the sale of necessities to workmen. These co-operative shops were of two kinds. One was that in which the workmen, buying at wholesale, shared among themselves the intermediate profit derived by the retailer; and the other, where the master kept the shop, and the workmen purchased from him. With the latter branch of the case he did not intend to deal at present, but his opinion was hostile to the formation of shops by masters. He exemplified his remarks in a very minute and satisfactory manner, and concluded by expressing himself hostile to

co-operative shops, but added that the data upon which he grounded his conclusions, were not so extreme as to preclude the possibility of subsequent inquiry inducing him to change his opinions. Several members joined with Professor Babbage in the view he had taken, and instanced various cases where the plan had been adopted and failed. Dr. Orpen concurred in the objections made to co-operative shops.—Dr. Maunsel read a paper upon coroner's inquests and the extent of infanticide, and the section then adjourned to next day.

At five o'clock, upwards of three hundred persons sat down at the ordinary at Morrison's. After dinner the President of the Association, who was in the chair, proposed "The King,"—"Success to the British Association,"—"The late President, Sir Thomas Brisbane,"—"The health of the illustrious foreigners," which was drunk with the utmost enthusiasm. Dr. Peithman, of Berlin, Professor Moll, Monsieur Agassiz, and Colonel Dick, severally returned thanks. The company then broke up and retired to the Rotundo, which was densely crowded. Nothing could be more brilliant than the appearance the room presented on this occasion. The Provost of Trinity College, who was in the chair, said that the real business of the Association was transacted at the various sections, but an abstract of the proceedings which occurred there would now be given the meeting. The reports of the sections were read by Drs. Romney, Robinson, and Apjohn; Professors Griffith, Graham, Harrison, and Babbage. The chairman said, that the impulse given to science should be considered, if they would receive any proper impression of the benefits conferred by this Association. The Association had, in fact, given an impulse to science never heard of before, and it was utterly impossible to fix any limits to the extent of its operations. After some other observations, in a similar strain of eulogy, the learned chairman called upon Professor Powell, to deliver his general views on the "undulatory theory of light." Professor Powell then went into a technical and most able dissertation upon light, and advanced some new facts which elicited great praise, particularly from Professor Hamilton.—Professor Whewell made some observations upon the phenomena of the tides, and referred, with satisfaction, to the evidence now being collected, upon which to form correct data. The tides were to be considered with reference to time and space. Professor Whewell referred to the different tide returns, furnished by the coast guard in 1834 and 1835, and also to the calculations agreed to be furnished by the various maritime powers, as most beneficial in affording means from which to deduce correct references with regard to the action of the tides. The meeting adjourned shortly after eleven o'clock.

Thursday—SECTION A.—*Mathematics and Physics*.—Mr. Jerard had prepared a long tract on the solutions of equations of the fifth degree. It was, however, far too voluminous to be read in the section. It was accordingly handed over to Professor Hamilton, who undertook to explain its contents to the meeting. We believe that it had been only in the hands of the learned Professor from the

morning before ; and it is a remarkable proof of his great powers, that by the next day he had so mastered the intricacies of this abstruse essay, in which, too, a new method of notation is introduced, that he was able this day to explain it in an abbreviated form to the section, and this he did in a manner that received the warmest thanks of Mr. Jerrard himself.—Mr. Phillips presented a most interesting report of experiments, by which he ascertained that a much greater quantity of rain falls in the upper parts of the atmosphere than on the ground. He selected York minster as the place of his experiments. During a shower, he had three rain guages placed, one on the top, a second on the ground, and a third half way down ; the higher you went from the ground the greater the quantity of rain.—Colonel Sykes read a paper on a mode of ascertaining the heights of mountains, by observing the temperature at which water boils.—Mr. M'Cullagh read a paper on the reflection and polarization of light, which was distinguished for the wonderful mathematical power it exhibited.—Mr. M'Gauley concluded his papers on electro-magnetism. The researches of the reverend gentleman met with the fullest approbation of the section.

SECTION B.—*Chemistry and Mineralogy.*—Papers read.—Mr. Snow Harris, on the electricity evolved by the evaporation of hot water.—Mr. Hartopp on the use of hot air in the manufacture of pig iron.—Dr. Apjohn, on the specific heats of gases.—Dr. Dalton on the use of symbols to indicate the constitution of chemical compounds.—Professor Powell, on specimens of chemical substances for optical purposes.—Mr. Mallet, on the bleaching of certain varieties of turf for the manufacture of paper.—Professor Davy, on the relative value of Virginian and Irish tobacco.—Mr. Moore, on the corrosion of lead pipes by contact with organic matter.

SECTION C.—*Geology and Geography.*—M. Agassiz exhibited the 5th part of his work on Fossil Ichthyology, and offered some explanatory remarks.—Dr. Trail read a sketch of the Geology of Spain.—Mr. James Smith noticed other authors, including an account of a fossil forest, and a statement regarding some fossil fish found in the Lias.

SECTION D.—*Zoology and Botany.*—In this section much interesting conversation took place. Mr. Mackay calculated from the number of layers found in a piece of Irish yew, that the tree must have been as old as the Christian æra. Dr. Litton stated that the age assigned by tradition to the celebrated yew tree at Mucrus, Killarney, was verified by the botanical inquiries into the number of the layers.

SECTION E.—*Anatomy and Medicine.*—In this section many very important papers were read, on strictly professional subjects. The most generally interesting, perhaps, was that of Dr. Corrigan, who detailed some very curious acoustic indications of the morbid state of the circulation.

SECTION F.—*Statistics.*—Colonel Sykes read a paper on the state of education in the Deccan ; Mr. Stanley, on the state of education

in the parish of Alderley; and Dr. Read on a book which he is bringing through the press, proposing a new plan for the extension of physical science.

It having been arranged that no lecture would take place on Thursday evening at the Rotundo, the round room and gardens were opened for an evening promenade, which was most fashionably and numerously attended. Most of the *savans* in town enjoyed this opportunity of social intercourse with the Irish people. The gardens were brilliantly illuminated, and the fine bands of the 7th Dragoons and the 14th regiment played alternately several of the choicest musical compositions.

Friday.—The sections did not assemble until twelve o'clock, in consequence of the fête at the Botanic Gardens.

SECTION A.—*Mathematics and Physics.*—Professor Apjohn made a communication on the determination of the dew point. He established his plan by experiments so clearly, that it is likely to become the general hygrometrical instrument used by philosophers.—A memoir of Professor Challies on the simultaneous vibration of cylindrical tubes, and the air contained in them, was read by Professor Hamilton, as secretary of the section, in his most impressive style.—Professor Wheatstone made a communication on the various mechanical constructions to imitate the human voice; he exhibited an instrument composed of a sound box, with a bellows attached to one end, to the other the frustrum of a cone, with the base outside, and keys inside the box, to the other end; by pressing the wind through the bellows, and fingering the keys with one hand, the other being applied to the box of the frustrum of the cone, and was thus enabled to utter intelligibly the words “papa,” “mamma,” “thumb,” “plumb.”—Professor Whewell brought forward his model of a new anemometer, which was ingeniously contrived, not only to shew the direction of the wind, but also its intensity, with a view to the correct ascertainment of the quantity of disturbance, in any given time, in the superincumbent air. The machine is also self-registering, by means of a spring pencil acting upon a cylinder. The contrivance seems exceedingly simple, and is considered likely to lead to some definite and practical results.—Captain Sir John Ross alluded to the means adopted by him during his last voyage, to register the direction of the winds, their velocity, combined with the state of the weather, the barometer and thermometer, from observations as accurately made as circumstances would admit of, every half hour. He expressed his doubt of the utility of the instrument in the arctic regions, but said he would have wished to have had such an instrument with him on his last voyage as the one then submitted, in order to test its utility and accuracy.—Professor Lloyd mentioned the result of several observations entered into by him and Captain Sabine on the dip and variation of the needle in various parts of Ireland. They were desirous, in their observations, to ascertain, with accuracy, the intensity of the terrestrial magnitude: these observations were undertaken as a part of a considerable num-

ber, now going forward, to learn the force of terrestrial magnetism at different places at similar times.—Professor Hamilton explained his views as to the variation in orbits, improving upon the system of La Grange.—Mr. M'Cullagh offered a beautiful generalization of planetary status.—Mr. Kane offered some observations on the interference of sound.—The section then dissolved.

SUB-SECTION A.—Mr. Hodgkinson detailed some experiments in reference to the collision of beams and piles, and the elasticity of timber under circumstances of collision.—Mr. Mallet read a paper on the fracture of bars of cast-iron.—Mr. Ettrick submitted to the section a model of an astronomical clock, more perfect in its compensation, and independent of the motion of the pendulum.—Mr. Pritchard exhibited an improved microscope.—Mr. Grubb made some very able and practical observations on an improved model for mounting an equatorial, adopted by Edward J. Cooper, M. P., of Makeree Castle, county Sligo. Mr. Cooper bore testimony to the excellence of the instrument, as also to the talent and perseverance of Mr. Grubb, in his scientific improvements and intentions.—Mr. Stevelly produced to the section an improved barometer.—Lieutenant Denham, R. N., made some interesting observations upon the effects of vibration upon iron railways, and especially where they passed over tunnels.—Dr. Lardner delivered some observations upon certain principles connected with railroads. Mr. Vignolles next addressed the section, and detailed several instances coming under his own observation, to shew that in railways where the curve has less than a quarter of a mile, no danger had ever occurred.

SECTION C.—*Geology and Geography.*—Professor Whewell explained his views respecting heat in the production of geological phenomena.—Professors Murchison and Sedgwick gave a description of the geological character of the slate country of Wales, coming after the coal formation, and a great extent of rocks and fossils, not previously examined, and entered into an explanation of the Siberian and Cambrian systems.—Professor Jacob entered into an explanation of some fossil madrepores, found in the Queen's County.—Several other communications were made, and the section was dissolved.—Professor Griffith, in the evening, at the Rotundo, mentioned that the Wollaston medal had been awarded to Professor Agassiz.

SECTION D.—*Zoology and Botany.*—Several members of the section proceeded to Howth on a botanical excursion.

SECTION E.—*Anatomy and Medicine.*—The proceedings opened by a paper from Dr. O'Beirne, explanatory of his peculiar views on the functions of the bowels, and giving some additional cases in corroboration of the accuracy of his published work.—Dr. Osborne made a most important communication on the effects of cold on the human body.—Surgeon Hutton gave a report of a peculiar case of disease of the brain, attended with idiocy, and congenital dislocation of the hip joint.—Dr. Handyside, of Edinburgh, stated a case of a similar nature, corroborating the views, and establishing the impor-

tance of the case described by Mr. Hutton.—Surgeon Adams read a paper on aneurism by anastomosis. This paper created great interest, and a conversation on the subject of it followed, in which many curious and important facts were elicited. The Surgeon-General, Surgeon Read, President of the Royal College of Surgeons, Professor Harrison, Dr. Handyside, of Edinburgh, Dr. Grenville, of London, Dr. Houston, and others, joined in the discussion.—Mr. Snow Harris exhibited the bones of the hip joint of the celebrated comedian, Matthews, who was supposed to have sustained a fracture of the neck of the thigh bone, by a fall out of a gig, many years before his death. Mr. Matthews had walked after the accident, but subsequently, after a long confinement to bed, the leg had become much shortened. An interesting discussion, as to the real nature of the lesion in the bone followed, in which Mr. Harris, the two Vice-Presidents, Professor Colles, and the Surgeon-General, Dr. Grenville, Professor Harrison, Surgeon Adams, Surgeon M'Dowel, Surgeon Hargrave, and others joined. It appeared to be the most general opinion, that the specimen presented was an instance of the disease termed *morbus coxæ senilis*, of which some specimens were exhibited of very analogous character, rather than one of fracture of the neck of the thigh bone, in which reunion of the broken bones had been effected. In consequence of the difference of opinion, it was finally arranged, that a committee should be appointed to examine into the nature of the case, which, if it proved to be an instance of re-united fracture of the neck of the femur, should be preserved as a rare and almost unique preparation.—Dr. Handyside of Edinburgh, gave an abstract of a paper which he held in his hand, containing numerous and important observations and experiments on the respective powers of the lymphatics, lacteals, and veins, in carrying on the phenomena of absorption from the surfaces and integral structures of the body.—Dr. Hart read a paper on a successful case of Cæsarian operation, communicated by G. B. Knowles, Esq., Lecturer on Botany, at the Birmingham School of Medicine. The patient recovered in the course of a month.

SECTION F.—*Statistics*.—An abstract from the ordnance survey of Londonderry was read. The accuracy of the survey was made the subject of great praise by Professor Babbage, Colonel Sykes, and Dr. Taylor.—A paper by Dr. Jones, on the statistics of lunacy, was read; as also one by Mr. Fox on the punishment of death in Prussia, Belgium, Norway, &c.

In the evening, the round room of the Rotundo was crowded to excess. The Chairman of the several sections gave an account of the various papers read during the meetings of the previous day and that morning.—Professor Babbage then proceeded to offer some suggestions as to the age of peat-mosses, &c. &c.—Professor Sedgwick gave an account of the labours of the geological section, and at the close of the discourse he was much applauded.

Saturday.—A general meeting was held at two o'clock, when the Rev. Vernon Harcourt, as general secretary, addressed the
 October, 1835.—VOL. III. NO. XIII.

meeting. He apologized for the delay which had occurred, but hoped it would be excused on account of the importance of the subjects which had been discussed before the committee. Invitations had been sent from Bristol, Liverpool, Birmingham, Manchester, and Newcastle, soliciting the Association to fix its next meeting in those several places, and the decision was finally made in favour of Bristol, on account of that city having sent the first decided invitation. Every kind of accommodation had been offered by the public and corporate bodies. A difficulty then arose in selecting the officers of the Association in provincial towns, as they might not wish to undergo the arduous labours and duties necessary to give effect to the proceedings; but there did not appear to be the least probability of any inconvenience arising in the present instance. Mr. Harcourt then enumerated the several sums of money recommended by the sections to be advanced for the prosecution of scientific objects in various branches; and of a determination to apply to government to send out an expedition to the Antarctic regions, for the purpose of discovering the Southern magnetic poles. He would not waste time in advocating the propriety of the system adopted by the Association, for there could not be a doubt of its being the most efficacious in imparting knowledge. The resources, he had much gratification in announcing, had increased to a greater degree at this than at any former meeting. From the occurrences in the sections, not only were new subjects remarked, but the spirit which these discoveries evinced, was also shewn. The members also derived incitement to new exertions, from the kindness with which they had been treated in every place, and surely in none more than the metropolis of Ireland. In science, the Association afforded important means for facilitating discoveries, and for awarding the just meed of approbation to the talents of distinguished philosophers. It was said to Dr. Black, by a friend, "How do you happen to have made important discoveries, and then stop short of completing those inventions, as Priestley and Watt have done." "They have not escaped me," was the reply, "but I am afraid of the reviewers."—The reviewers might formerly have had the power to repress merit, but they could not do so any longer. If any man were too modest to give an account of his scientific proceedings to the section, another member would be prepared to act as a deputy, in order to get that praise awarded to him which he might happen to deserve. There were numerous other points in which the merits of the Association could be considered, but time did not allow him to dilate upon them. Mr. Harcourt then read the names of the officers appointed for the year.—Treasurer, Mr. John Taylor; General Secretaries, Mr. V. Harcourt, and Mr. Baillie; Assistant General Secretary, Professor Phillips; Secretaries, Dr. Turner, and Mr. Yates. The funds of the Society were then stated by Mr. Taylor, the Treasurer:—on the 30th of July last, there was cash in the Treasurer's hands to the amount of £509, in the stocks £2,361, unsold copies of works about £560. In Dublin, the Treasurer had received 1,228 subscribers,

and £1,750, together with an additional sum of £94. for books sold, making the total income £5,214. The expences and sums due by the Association were probably £1,000, leaving a clear property of £4,214. It was gratifying to state that the receipts of the preceding year in Edinburgh were £1,626, while in Dublin they amounted to £1,750; and also that grants for the advancement of science, to the amount of £1,700, had been this year placed at the disposal of the committee. Of this sum the following was its mode of distribution:—for a duplicate reduction of the astronomical observations made at L'Ecole Militaire, of Paris, £500; for determining the constant of lunar notation, £100; for observations on the temperature of the tide, £100; for continuing tidal observations at Liverpool and the port of London, £250; for the advancement of meteorology, £100; for the continuation of Professor Wheatstone's experiments, £30; for reducing to practice Dr. Jerrard's plan for solving equations of the fifth or higher degrees, £30; to Mr. Johnston for completing tables of chemical constants, £20; to Mr. Fairburn for experiments on the hot and cold blasts for iron works, £30; for prosecuting researches in British fossil ichthyology, £105; for researches into the absorbents, £50; for examining the sounds of the heart, £50.

Concluding Evening.—Dr. Barry gave an account of his ascent to Mount Blanc. He mentioned that 20 persons only had reached the summit of the mountain, and, of these, 12 were Englishmen.—Professor Babbage made some remarks on a whirlpool observed at the island of Cephalonia, through which the sea had poured for 40 years. He had applied to Lord Nugent, the Governor of Corfu, to know whether he was acquainted with the fact, and that nobleman had given him a statement on the subject, which he would endeavour to report, although not perhaps with sufficient accuracy, as he omitted to take notes at the time. A hole is seen between two rocks, and an excavated channel conveys the sea water into a pit, 100 yards round, and four feet below the surface. The sea that enters rushes in with considerable velocity—the water rises in the pit through the sluice, to the height of two feet, and is then discharged through some means not yet ascertained. Mr. Babbage observed that the waters which disappeared might go into vast hidden receptacles not yet filled up, or else the volcanic agency supplying heat might, as the waters descended into the earth, cause eruptions.—Professor Wheatstone exhibited his speaking machine, and explained the principles on which this ingenious machine is invented.

The thanks of the Association were then given to the Presidents, &c., to the Public Institutions in Dublin for the accommodation granted to them, to Sir John Tobin, of Liverpool, for the use of a fine steam vessel for the conveyance of Members of the Association to and from Ireland—and the proceedings of the British Association for 1835 terminated.

Experience is so much in favour of these meetings, and their

utility and importance to science are so decidedly pronounced, that there is now no fear of a cessation of their continuance from any rational cause whatsoever. We look forward, therefore, with much confidence to a very considerable increase in the number of Subscribers at the next anniversary, and we hope to see it even exceed in splendour and attractiveness to that which we have been thus particularizing.—It has been suggested to us, by many studious men of eminence, that literature, domestic and foreign, should form one of its prominent objects in future meetings; and we are of opinion that there is much shrewdness and plausibility in this observation. There is a certain aridness in long discussions on scientific themes which would be well relieved by occasional dissertations on elegant literature—and we are impressed with this conviction the more forcible from the circumstance that those lectures which in the slightest degree partook of this character were the most crowded and the most regarded. Even philosophers cannot be always on stilts, and variety, judiciously blended, is said, and truly said, to give a zest to most of the intellectual gratifications of life.

[We have given this report as fully as our limits will allow,—to have given it as minutely as, perhaps, it ought to have been, would require the space of a thick octavo volume. With respect to its correctness, we can speak confidently, for so important did we consider the meeting, in numerous points of view—national, scientific, and literary—that we travelled to the Irish capital, for the sole purpose of watching all the movements of this learned assembly, and of furnishing our readers with a faithful analysis of its proceedings, from personal observation. This report, therefore, is not drawn from the evidence, or hear-say, or imagination of others; and however defective it may appear in copiousness, our readers will find that, in its general, and even in its minute, particulars, it lays just claim to the merit of scrupulous faithfulness.]

PROFESSOR AGASSIZ ON ICHTHYOLITES.

A splendid work, which will prove alike interesting to the student of Ichthyology and the geologist, is now in the course of publication, by Professor Agassiz, of Neuchâtel. The subject of it is *Ichthyolites* or *Fossil Fishes*.

From the prospectus of the *Recherches sur les Poissons Fossiles*, now lying before us, we learn that the first part (*livraison*) was published in September, 1833; the second, in February, 1834: and that it would continue to appear regularly every four months until the whole is completed. The fifth part was laid before the British Association at Dublin, by the learned Professor.

The work, when finished, will consist of twelve parts ; and form three volumes in quarto of descriptive matter, and one folio, of two hundred and fifty Plates. It may be considered, with respect to Vertebrated Animals, as a complement to the celebrated *Recherches sur les Os Fossiles*, of Cuvier, and the *Petrefacta Musei Bonnensis*, of Goldfuss. We shall procure, as soon as possible, the early *livraisons* of this valuable publication, and present an analytical notice of them to our readers.

Our zealous townsman, Mr. Weaver, of the Natural History Museum, possesses, by the liberality of J. Greaves, Esq., a most beautiful and interesting specimen of fossil fish, lately discovered in a stone-quarry, belonging to that gentleman, near Stratford-upon-Avon. Professor Agassiz, who obtained a knowledge of the existence of this specimen, and the loan of it for the purpose of his work, through the medium of Professor Buckland, of Oxford, has recently returned it to Mr. Weaver, with a most gratifying letter, of which we subjoin a translation ; * and several impressions of the splendid drawing upon stone, which has been made from it under the eye of the Neuchâtel Professor. Of this drawing, a reduced but very correct copy, executed by Mr. Underwood, is given in our present number. The Ichthyolite, in question, appears to be an *unique* specimen of a new species of the genus *Tetragonolepis*, so named from the *four-angled* (*tetragonal*) figure of the *scales*. The circumstance, from which the specific designation *angulifer*,—a Latin adjective literally signifying angle-bearing,—applied to it by Professor Agassiz, is not equally obvious or comprehensible.

Birmingham, Septr. 1835.

* Sir,—In returning to you the fossil fish which you had the kindness to confide to my care, I take the liberty of transmitting to you some copies of the drawing which I have published in my work. It is, unquestionably, one of the finest specimens of fossil fish with which I am acquainted. It has proved the more valuable, as it is a new species, of which I know no other specimen but that which you possess.

Accept, Sir, with my thanks, the assurances of my distinguished consideration.

L. AGASSIZ.

Oxford, August 9th, 1835.

To the Editor of the Analyst.

SIR,

As the long-expected Comet of Halley is now actually visible, and many of your readers are, no doubt, anxiously anticipating the pleasure of watching its phenomena, I have thought that it might not be unseasonable to lay before them, through the medium of your Journal, a few notices as to the best method of making such observations upon it as may be of real value and interest. The general diffusion of scientific attainments would appear, at first sight, to render this a superfluous task ; but I am convinced that the scarcity of accurate information respecting Comets, is much greater than is usually supposed : most of the popular statements, even down to the present time, being either very defective or shamefully erroneous ; while such as are sufficiently explicit, and deserving of confidence, are not very accessible. I have therefore compiled, from unquestionably authentic sources, an enumeration of the phenomena whose existence it will be desirable to ascertain by observation in the present case. If any of your astronomical readers should find it serviceable in drawing their attention to the points most deserving of notice, I hope that, with your sanction, they may be induced to communicate their observations to your periodical ; which, if all made upon system, and with an uniform view to determine the presence or absence of certain phenomena, would not fail to possess great interest individually, and collectively, no small value and importance.

I remain, Sir, your humble servant,

THOMAS WILLIAM WEBB.

Tretire, near Ross, Sept. 16, 1835.

HINTS TO OBSERVERS OF HALLEY'S COMET.

It is well known to those who are in the habit of using telescopes, how little can be seen, in many cases, by a person whose eye is entirely unaccustomed to the object to be observed, and who has no previous notion of the particulars to which his attention should be more expressly directed. This, of course, will be peculiarly the case with an object so faint and undetermined as a Comet ; and it is by no means improbable that, unless observers previously determine upon the points which require attentive examination, the Comet may pass repeatedly through the field of their telescope, without their being aware of the existence of phenomena which, taken in connection with older observations, may prove of considerable importance. We know so little as yet of the real nature and construction of these wonderful bodies, that we cannot presume to advance to anything like a generalization of the observations hitherto made, many of which would appear to be contradictory and inexplicable : we must therefore, at present, be content with accumulating as many well-authenticated facts as possible, deduced from a careful examination of every Comet that visits our system, from a combination of which we may, at some future period, be better able to develop the laws that govern their mysterious construction. The subjoined particulars appear to be very worthy of attention with this view ; and they are humbly offered to

the notice of the astronomical readers of the *Analyst*, in the hope that, by their united efforts, they may be able to ascertain some of them satisfactorily.

In the first place, however, it may not be amiss to premise, to unpractised observers, a few hints on the management of their telescopes. No observation should be made with an erecting or terrestrial eye-piece, as the additional number of lenses occasions a great loss of sight : astronomical eye-pieces alone should be used ; or a terrestrial eye-piece may be converted into an astronomical one, by unscrewing the tube nearest to the eye, and taking out the two lenses from its interior end ; as the field of view may, however, in this case, be rather unserviceable, it will be a still farther improvement to remove the innermost of the two lenses at the eye-end, leaving only two lenses in the whole instrument (if an achromatic), viz : the object glass, and that next the eye. In this case, the edges of the field will be obscure, and its appearance not satisfactory to an eye unaccustomed to it, but an object in its centre will be seen very clearly and distinctly in an inverted position. The focal length of the telescope, it should be observed, will be greatly shortened by this adjustment, which, if previously untried, should be made, at first, upon terrestrial objects in the day-time. If the instrument has several astronomical eye-pieces, it will be proper to use them all, in any observation that is in the least doubtful ; but the higher powers will be found deficient in light, in observing so faint a body ; and, generally speaking, no higher power should be employed than is sufficient to develop satisfactorily the phenomena under examination : the advantage of a large field will be found to be very great in ascertaining the extreme boundaries of an object whose termination is frequently so difficult to be distinguished ; and from the neglect of this precaution astronomers of eminence have occasionally been led into considerable errors. It may not be so generally known as it deserves to be, that the deposition of dew upon the object-glass may be entirely prevented by the employment of a tube of stiff paper or pasteboard, made to fit the end of the instrument ; this not only saves much time, but obviates the necessity of wiping the object-glass, an operation seldom performed without some danger of scratching it. If, in addition to this precaution, the brass cap is placed upon the glass, before it is removed into the warm air of the house, damp will scarcely ever be formed upon it under any circumstances.

The particulars which it is desirable to ascertain, may be enumerated as follow :—

1. Whether the Comet has anything that can be called a moderately well-defined disc in the centre, or whether it is a mere luminous point, or only a general and gradual accumulation of light, without any apparent outline.—The former, though not very usual, was certainly the case with this Comet at its return in 1682, when it is described, by Cassini, as exhibiting in the telescope a disc “aussi rond, aussi net, et aussi clair que celui de Jupiter.”

2. If it has a disc, whether that disc has an uniform illumination, or is brightest in the centre ; and whether its appearance is invariable, in this respect, at different times.

3. Whether the disc at any time exhibits any spots, or anything of a mottled aspect, or is irregularly terminated, or seems to be composed of an assemblage of small fragments ; and, in this case, whether their relative brightness and position are subject to any change.

4. Whether the disc is accurately circular or not. In 1682 the nucleus, according to Hevelius, had throughout an oval form,† but this appears to be contradicted, by Cassini, in the passage already cited ; and it is not recorded to have been noticed at its last return in 1759. (The previous returns, it will be remembered, were anterior to the employment of telescopes.)

5. Whether the disc, as it approaches the perihelion, manifests any symptom of phases. This most curious feature was actually exhibited by this Comet in 1682, according to Delambre. He states that Picard and La Hire

* *Memoires de l'Academie Royale*, 1699.

† Littrow, *Beytrage zu einer Monographie des Halley's chen Cometen*, Wien, 1834, p. 56

observed it, and "la figure en croissant est nettement dessinée dans les registres de l'Observatoire.* Hevelius also observed, but only on one night, (Sept. 8, six days before the perihelion) a brilliant hook extending itself from the nucleus, in the direction of the tail, for a distance equal to the diameter of the head.† This could hardly have been a true phasis; but the possible recurrence of such a remarkable phenomenon deserves to be carefully watched: perhaps this hook was actually what is described as a crescent by the Paris observers.

6. Whether it may be possible, if there is anything like a planetary disc, to observe the occultation of a fixed star by it; and, if so, whether it is a total obscuration of the star, or only such a diminution of its light as must necessarily result from its being viewed, as it were, upon a bright ground.

7. If there is nothing but a luminous point in the centre, whether this point is constantly visible every night, and during the whole of each observation.

8. If there should be merely a general condensation of light towards the centre of the head, whether this condensation is sudden or gradual; and whether it is equally gradual at different times, or, by its more sudden increase of brightness, and more defined outline at certain periods, affords a suspicion of an interior body obscured by a variable atmosphere.

9. Whether the central parts or nucleus of the Comet is subject to any remarkable variations in brightness from night to night, the air continuing equally clear; and whether anything like a periodical return can be detected in such variations.

10. Whether the nucleus, be it what it may, is situated in the centre of the coma, and whether there is any variation in this respect. In 1682 Flamsteed observed the nucleus of this Comet to be twice as near to the edge of the coma on Sept. 4, as it had been three or four days previously.‡

11. Whether the coma exhibits an uniform appearance on every side, or is more dense in any direction, or appears as if scattered and interrupted.

12. Whether the extension of the coma decreases, in proportion to the size of the nucleus, as it approaches to the perihelion; allowance being made for its increasing distance from the earth, and for the effect of twilight.

13. Whether there is any dark space included within the head, and surrounding the nucleus; or whether there may be more than one such interval, and whether it, or they, extend round the whole, or only a portion of the nucleus.

14. Whether the darkness of such included space approximates to the depth of colour of the exterior sky, and whether this darkness is variable in intensity upon different nights.

15. In 1456, three days before the perihelion, the head of the Comet, viewed (of course) with the naked eye, shone with the brilliancy and twinkling of a fixed star, so that many persons imagined it must have been in conjunction with several small stars.§ As the present position of the earth with respect to the Comet is far less favourable than during that most splendid of its recorded appearances, nothing of this kind can perhaps be expected, but it should at least be borne in remembrance, and attended to.

16. In 1607, when the relative positions of the earth and Comet were peculiarly similar to the present, and therefore a similarity of aspect may be expected, the head appeared, to the naked eye, not exactly circular, but, as Kepler expresses it, "quodam modo strumosa, deficiens a rotunditate."||

17. The length and breadth of the tail should be carefully observed on every favourable opportunity. Much will, in this case, depend upon the state of the atmosphere and the eye of the observer. In 1456 the tail was not less than 60° in length. Picard estimated it at 30° , in 1682; while He-

* *Abregé d'Astronomie*, p. 561.

† Littrow, *Beytrage*, &c., ubi supra.

‡ *Historia Cælestis*, L. i, P. iii, p. 110.

§ Littrow, *Beytrage*, &c., p. 20.

|| Idem, p. 36.

velius made it but 12° on the same night, and never more than 16° . In 1756, La Nux, in the clear atmosphere of the Isle of Bourbon, traced it for 47° .*

18. Whether the tail progressively increases in breadth to the extremity, or, on the contrary, assumes a tapering form.

19. Whether one side of the tail is better defined than the other, as was distinctly observed by Flamsteed in 1682†, and whether this appearance is constant.

20. Whether the tail is curved, and whether it deviates, at its origin, from exact opposition to the sun; and whether there are any symptoms of a reverse or reflex curvature at its extremity.

21. Whether the tail, when near the horizon, vanishes entirely, as if obscured by a cloud, as is asserted by Apian to have been the case in 1539.‡

22. Whether the tail is divided lengthwise into two or more streams by a dark space; whether such space is visible in the neighbourhood of the nucleus, or appears uninterruptedly to surround it; whether its depth of shade is uniform; and whether it extends to the extremity of the tail.

23. Whether any smaller lateral streams accompany the principal tail in the vicinity of the head.

24. If there should be several branches in the tail, whether they are all of equal brightness, and whether the difference in this respect is constant; whether their relative length and breadth remain unaltered; and whether there is anything like an interruption anywhere in their length.

25. Whether the light of the tail, or of its several sub-divisions, is uniformly distributed in the direction of its breadth; or whether it is most vivid at the edges, or in any other part.

26. If there should be anything remarkable in the form of the tail, whether the periodical recurrence of that peculiarity may justly lead to the idea of a rotation.

27. Whether there are any traces of an anomalous tail, *i. e.*, a stream of light in the opposite direction, tending towards the sun.

28. In 1456, the tail was said to have resembled at times a sparkling flame, which gave rise to the conjecture that it might be in conjunction with numerous small stars. Such a phenomenon may possibly, at least, recur.

29. It is peculiarly deserving of attention that in 1607, to which return, as has been already stated, the present bears the nearest resemblance, the tail exhibited that very peculiar, but unquestionably authenticated, appearance of coruscations or fluctuations in length and brightness. Kepler's words are very clear and decisive: "testabantur enim de Cometa anni 1607 omnes qui diligenter illum fuerunt contemplati, caudam jam brevem, mox in ictu oculi longam apparuisse, non tamen, quod Cardani verba et exempla innuere videntur, (concerning the Comet of 1556) flamma, ut sic dicam, ad latera expatiante, sed solum prorsum ruente. Adroque mihi, qui debili visu sum, vix aliter apparebat hæc cauda, quam ubi inclaruit seu promicuit: tunc enim non mediocriter longa apparebat, et oculos evidentes|| movebat."§ If such fluctuations can be observed, it will be very desirable to note, if possible, their frequency, and whether they may not affect the breadth as well as length, of the tail. If there are several distinct branches, it should be carefully noticed whether the coruscations pervade them all.

30. The colour of the Comet should be remarked, and whether the different parts exhibit any difference or contrast in this respect. In 1759, the nucleus was said to be whitish, and similar in colour to the planet Venus.¶

Such rapid variations have frequently been perceived in some Comets, that even hourly observations have ascertained changes of a very obvious and

* Idem, pp. 55, 64.

† *Historia Cælistis*, L. i, P. iii, pp. 109, 110.

‡ Littrow, *Beytrage*, &c. p. 25.

§ *evidenter*?

¶ *De Cometis, Augustæ Vindelicorum*, MDCXIX, p. 102.

¶ Littrow, *Beytrage*, &c. p. 64.

striking nature, especially in the form of the tail, which cannot be too closely watched. Allowances must, however, be made for the fluctuating state of the atmosphere, whose influence will be peculiarly detrimental to observations of so delicate a nature. It need hardly be added, that many of the above suggestions may be expected to prove fruitless upon the present occasion, especially as the Comet is not in the most favourable position for observation. They will, however, not be considered entirely useless, by those who wish to see the present state of our information with regard to the construction of these very interesting, but most imperfectly understood, bodies.

PROCEEDINGS OF PROVINCIAL SOCIETIES.

MEETING OF THE

PROVINCIAL MEDICAL AND SURGICAL ASSOCIATION, AT OXFORD.

THE members of this admirable Institution, which was founded at Worcester, in the year 1832, held their general meeting, for the present year, within the walls of the University of Oxford. The council of the Association met on the 22nd of July, at the Anatomy School, to make the necessary arrangements for the general meeting appointed for the next day, in which they derived every assistance from the exertions of their President, Dr. Kidd, the regius professor of medicine in the University. Previous to the general meeting, many of the members of the Association availed themselves of the opportunities afforded them, by the kindness and liberality of the authorities, to visit the Botanic Garden, the Ashmolean Museum, the Bodleian Library, the Picture Gallery, all of which were thrown open to them upon the occasion. At the Botanic Garden, a public breakfast was given by Professor Daubeny; immediately after which Dr. Buckland, the professor of geology, invited the members to his museum, and gave a most interesting demonstration of some of his fossil remains, especially pointing out to the attention of his gratified auditors, the peculiarities of structure of the megalotherium, of the saurians, and other extinct animals, and deducing therefrom their natural habits and mode of life. After the conclusion of Dr. Buckland's demonstration, Mr. Costello performed the operation of lithotomy, before a large assembly of the members. The Anatomical Theatre having been found incapable of holding all the members of the Association who were anxious to see the operation, application was made to the Mayor, who kindly gave the use of the Town Hall for the purpose.

The general meeting took place in the Radcliffe Library, at half-past one o'clock, and by the hour appointed, upwards of three hundred persons had assembled, including, among other eminent individuals, Dr. Gilbert, principal of Brazen Nose College, Dr. Ingram, president of Trinity College, Dr. Macbride, principal of Magdalen Hall, Professors Buckland, Cooke, Daubeny, Faussett, Kidd, Ogle,

Baden, Powell, Wilson, Sir Charles Throckmorton, Bart., Sir Charles Bell, Drs. Barlow, Baron, Billing, Carrick, James, Clarke, Conolly, Forbes, Hastings, Hodgkin, Holme, John Johnstone, Prichard, Robertson, Sims, Somerville, &c., Messrs. Costello, Crosse, Griffiths, Hebb, Hetting, Tuchwell, &c., &c.

Dr. Kidd, the President, having been called to the chair, delivered an eloquent address, in which he expressed his gratification at receiving the Association within the walls of so majestic a monument to the munificence of an individual belonging to the medical profession, as the Radcliffe Library. After a well-merited compliment to the skill, enterprise, and talent of provincial practitioners, and an appeal to the literary works of the illustrious dead, as well as of the no less illustrious living, with which the shelves of the edifice were loaded, as an evidence of its truth,—he ably pointed out the claims which the profession has upon public estimation and gratitude, by their unwearied and gratuitous exertions in the cause of philanthropy, by their self-devotion to the duties of their calling, though often rewarded with neglect,—and by the high standard of moral excellence and intellectual ability to which, as a body, they have attained. “Such” observed the learned Professor, in concluding his address, “Such are the claims of those two members of the Provincial Medical and Surgical Association, on whom this University has lately conferred the highest honour which it has the power of conferring. Long may those individuals enjoy an honour, to the possession of which I know they attach a due value; and in the mean time may Oxford meet with further opportunities of enrolling among its members, by means of similar honours, names as distinguished as those of Abercrombie and of Prichard. Gentlemen,—It would now become my duty immediately to propose that Dr. Hastings should be requested to read the report of the Council; but before doing so, I have a most pleasing duty to perform, the pleasure arising from which would have been doubled, had both the individuals been present to whom I refer. Dr. Abercrombie would most willingly have attended the meeting of the Association, had it been in his power; but when we consider that he resides at the distance which divides Edinburgh from Oxford, and when it is considered, also, what his duties are, I could neither ask nor expect it. But I have it in my power to present to Dr. Prichard, which I do with unfeigned pleasure, that testimonial of his merit which the University has conferred upon him.—[The diploma was now presented to Dr. Prichard, who on receiving it was greatly applauded.] Gentlemen,—though I do not wish to over-rate an honour which has been conferred by a body to which I have the honour to belong, yet, at the same time, I naturally wish that it should not be undervalued; and as many persons may not be aware of the extent of the honour thus conferred, I will state that it gives to the individual to whom it is presented, not only all the privileges which he would acquire by the strictest compliance with the rules of the University, by a residence of many years, and by passing through several de-

grees, but it gives him that honour immediately, and without any condition. A member of the University who has acquired the honour in the regular course, could not exercise the right of voting immediately; but when it is conferred by diploma, as in this case, the individual to whom it is presented acquires an immediate right to vote."

The report of the council was then called for and read by Dr. Hastings, after which Dr. John Johnstone, of Birmingham, said,—“The report which has now been read is so satisfactory a document, and goes so fully into the subject, both of the progress of our Institution, and of the means recommended for the furtherance of its object, that I shall not enter into any remarks upon that detail. If I were to enter into it, it would be upon that part which recommends to your consideration the subject of the poor in relation to medical attendance; but as that subject would require a long discussion, I think it would be much better that the recommendation made in the report should be adopted, namely, that every gentleman concerned with the poor, and who is employed as a medical practitioner for their relief, should make his own report to this Association, so that we might have a general understanding on the subject. But on the present auspicious occasion, surrounded, as we are, by the great body of enlightened practitioners in this country, assembled, too, in undiminished numbers, and with increased zeal, in this,—the very seat of the Muses, and the resort of sages for so many centuries past—this sanctuary of learning, revered and honoured by all civilized nations, and endeared, especially to some of us, by recollections and associations which bind us to it by millions of ties of almost filial duty and affection—it is impossible for us not to exult at our present position, and not to believe that our views are correctly estimated, and that it is known we are met together, not for any selfish purposes but, by enlarging the volume of science, to diminish the mass of human misery. It cannot be forgotten in our annals, too, that by the bounty of this University, and by the kindness of our learned president, we are assembled under this dome, reared and dedicated by medical munificence, for the purposes enumerated in the report. Under this dome, if I may dare to use the image, the *Genius loci*, the spirit of medicine itself, looks down with complacency upon us and breathes a benediction upon our labours.” Dr. Johnstone concluded by moving that the report of the council be received and adopted by this meeting, which was seconded by Dr. Carrick and carried unanimously.

Dr. Prichard, at the request of the president, then read the Retrospective Address, which, on its conclusion, was universally applauded.

Sir Charles Bell moved that the thanks of the meeting be given to Dr. Prichard, for his able and eloquent address; and that he be requested to print the same in the fourth volume of the *Transactions* of the Association:—seconded by Dr. Daubeny.

Mr. Tudor (of Bath) moved—that the Anniversary Meeting, for

the year 1836, be held at Manchester ; and that Dr. Holme be requested to accept the office of President-elect, which was carried unanimously.

Dr. Barlow (of Bath) proposed—that the thanks of the meeting be given to Dr. John Johnstone, the late President of the Association ; and that he be appointed a permanent Vice-President. This resolution was seconded by Dr. Bevan (of Monmouth) and carried unanimously.

Dr. Conolly (of Warwick) said, that if he had had the choosing of the resolution he was about to propose, he could not have selected one which would have given him greater pleasure. The purport of the resolution was—that the thanks of the meeting be given to Dr. Hastings and Mr. Sheppard, the Secretaries of the Association ; and that they be requested to continue their services. It was impossible for any one, who, like himself, had had the pleasure of attending all the meetings of the Association, to submit the present motion without at the same time recalling the very great degree of pleasure which he, in common, he believed, with all other members of the Association, had derived from meeting his professional brethren. Such opportunities as these were almost the only means that medical men had of seeing gathered together much that was estimable in their profession, and enjoying that intercourse of those means of communication from which, under ordinary circumstances, they were debarred. He felt how deeply the Association was indebted to the gentlemen who were named in the resolution, and he trusted that their valuable services would not be withdrawn. Mr. Hetling (of Bristol) seconded the resolution, which was carried unanimously.

Several other resolutions, relating to the affairs of the Association, were severally moved and seconded by Dr. Booth, Dr. Symonds, Mr. Wingfield, Dr. Streeten, Dr. Bompas, Dr. Holme, Dr. Scott, Mr. Wickenden, Mr. Griffiths, Dr. Fox, Mr. Wickham, Dr. Robertson, Mr. Morris, Dr. W. Connolly, and Mr. T. Griffiths.

In the course of the morning Dr. Scott read the Report of the Committee, appointed at Birmingham, in 1834, to consider the practicability of establishing a Benevolent Society, in connection with the Provincial Medical and Surgical Association.

The report of the committee was unanimously adopted, and its recommendations ordered to be carried into effect.

Mr. Wickenden read the report of the library committee appointed last year, and Mr. Hebb an interesting report respecting the state of medicine in Holland, from Dr. Nieuwenhuys, of Amsterdam.—Several communications were also made by Mr. Smith, of Southam, Mr. Rumsey, and other gentlemen, shewing the oppressive nature of the new Poor Law Act, with respect to the attendance of medical practitioners upon the poor ; and a committee was appointed to report thereon at the next anniversary meeting of the Association.

The business of the day having been brought to a satisfactory conclusion, Dr. Johnstone took the chair, and, upon the motion of Dr. Hastings, seconded by Mr. Addison, a most cordial vote of

thanks was accorded to the president, Dr. Kidd. The meeting then broke up, and in the afternoon the members and their friends, amounting to nearly two hundred, dined together at the Star Hotel. Dr. Kidd presided at the dinner table, as chairman, and several distinguished members of the University, as well as many eminent individuals belonging to the profession, were present.

That each succeeding anniversary of the Association shall be equally distinguished with that which has so lately been held in the halls of this ancient and revered seat of learning, is scarcely to be anticipated; but no reflecting mind can witness these cheering scenes, without wishing all prosperity and success to an institution of such unquestionable merit. The main end and object of this society is the amelioration of the condition of our fellow men; for, whoever has felt the ills attendant upon the frailty that suffering mortality is heir to, will hail with gratitude and delight these works of benevolence, by which the knowledge of that divine science of medicine is extended far and wide, and the influence of its cultivators—ever exerted for good—increased. Let, therefore, the members of the medical profession continue their exertions in the cause of their science. The reward they will obtain is not lightly to be esteemed. It is the consciousness of having in their day, and to their power, done what they can towards improving the condition of suffering humanity—and though the civic crown may be for a time withheld—the unfading wreath of honor, which adorns many an elevated name shall still be his who devotes his time and his best energies to the alleviation of pain and disease.

BIRMINGHAM SCHOOL OF MEDICINE.

FIRST ANNIVERSARY MEETING.

THURSDAY, the 27th of August, being the day appointed for holding the Anniversary Meeting of this institution, a great number of patrons and friends assembled at the Museum, in Paradise-street, having been previously entertained at breakfast, at Dee's Royal Hotel, by Mr. Sands Cox, the founder of the School. The party then adjourned to the School of Medicine, at which Dr. Edward Johnstone presided; and the report, which was a most satisfactory document, was read by Dr. John Johnstone, the Vice-President. This report, of course, embraced every variety of information connected with the establishment, and was amply conclusive of the rapid advancement to perfection of all its departments. It appears that there are now ninety students inscribed on the register of the School, being an increase of more than thirty on any former year,

and of which the majority come from neighbouring and distant counties; and it must be gratifying to learn, from the Parliamentary Report on Medical Education, recently published, that not a single student educated at the School, during a period of eight years, has been rejected by the Royal College of Surgeons. The Museums, Library, and Lecture-room, are completely fitted up by means of the donations presented during the last year,—and the Museum of Anatomy, which has recently received many valuable additions in preparations and other illustrative subjects, will now bear comparison with most of the metropolitan Schools. The Natural History department has been enriched by splendid contributions of upwards of two hundred rare specimens of Zoology from Australia, presented by the enterprising and scientific Major Wakefield, of the 39th regiment, a native of the county, amongst which are specimens of the Gallinacæ, Psittaci, and Tringæ, not yet described; and amongst the animals, specimens of the Marsupial tribe and Ornithoryncus,—by many beautiful South African birds from the Rev. Mr. Gisborne—by specimens from the Brazils from Edward Armfield, Esq.—and by various other objects of Natural History from the Rev. R. Pearson, J. P. Wilmot, Esq., J. E. Piercy, Esq., and other gentlemen.—In the Botanical department are many curious specimens of dried plants from the Pyrenees and Alps, presented by that munificent patron to the Institution, Sir C. Throckmorton, Bart., and it has been further enriched by an extensive Hortus Siccus of Australian Plants, the fruits of Major Wakefield's researches in that interesting and little-explored division of the globe; and also by a present of that singular vegetable production, the Bread-fruit, from the Rev. T. East, with some curious products of arts and manufactures of the natives of Tahiti. The Mineralogical department is indebted to Edw. Bagnall, Esq., amongst other curiosities, for an enormous fossil reed, belonging to the *Sigellaria pachyderma*, found at Pentwyn, Monmouthshire, in sand-stone, about eighteen feet from the surface, above the black pin ironstone. This magnificent specimen weighs nearly four hundred weight, and is about five feet in circumference.—Very liberal contributions towards a collection in Conchology have been made in this department by the Earl of Mountnorris, and Lieut. Dutton, a native of the town. The Library, it seems, is the only department not entirely free from debt, and the pecuniary liability, in this instance, amounts only to £67. The total number of volumes belonging to the School exceeds nine hundred, amongst which are many of the most rare and valuable editions of the ancient medical classics, increased during the present year by contributions from Sir G. Skipwith, Bart., the Rev. Chancellor Law, and others; and also numerous valuable works of reference, with plates, purchased by the funds of the School.—An enlarged course of study in Mathematics, Natural Philosophy, and Natural History, as well as a longer term of attendance upon Lectures, having been required by the accredited authorities in London, it has been determined to establish Professorships in these important

branches of medical education. It is recommended that the Board of management should be enlarged to twelve, and that country governors be admissible.—This extremely clear and satisfactory report concludes by earnestly and respectfully inviting the patrons of the institution, the friends and parents of students, and the medical profession in general, to take every convenient opportunity of inspecting the increase of the Museums, and indeed the whole progress of the School of Medicine, the permanency of which is now considered to be immoveably established, and the utility of which can only be maintained by zealous endeavour, by regularity, and by strict discipline in every department.

The Rev. Chancellor Law then delivered an eloquent address, of which the following is a brief outline :—

After citing an anecdote of Sir Benjamin Brodie, in illustration of the correct and generous feeling of that individual, the learned gentleman alluded to the Profession as a body, which, he observed, abounded “with gentlemen of the most christian-like tone and temper, and of singular humanity; remarkable alike for the strength,—the correctness,—the richness,—of their highly cultivated and christian minds.”—In corroboration of this eulogium he adduced the testimony of Dr. Johnson, and Sir Robert Peel. The former, in his life of Garth, says, “Every one has found in Physicians great liberality and dignity of sentiment; very prompt effusion of beneficence, and willingness to exert a lucrative art, where there is no hope of lucre.” Sir Robert Peel had publicly declared in the House of Commons, that “For the enlightened views, pure philosophy, and liberal feelings of medical men generally, he felt so much respect, that he did not hesitate to pronounce them a blessing to their native land, and an honour to humanity.”

Mr. Law, in addressing himself to the members of the school, strenuously advocated, what he placed far before all other requisites, an observance of religious obligations, and correct moral conduct, and, in the course of his observations, repelled the opinion entertained by some persons, that the medical profession is inclined to scepticism, illustrating his defence by a beautiful description of the admirable structure and mechanism of the human eye and ear.

Our limits will not permit us to touch upon several other topics alluded to in the course of this eloquent address; but the following apposite remarks for the guidance of students are deserving their attention :—

“Allow me then to recommend young students to adopt such a line of general study, as, by enlarging the compass of their minds, may gain for them the power of discovering latent causes, and tracing the windings of the human heart to its secret sources. For oftentimes, I believe, diseases are generated by causes not apparent in the mechanical structure, or apparatus,—if I may use the expression,—of the human body, but proceed from the hidden working of some master-passion, acting sympathetically on the nerves, and baffling the utmost skill of the anatomist and demonstrator. It was a sudden and powerful emotion of the mind which is said to have caused the

death of Mr. John Hunter, and which still continues to strike down its thousands and tens of thousands. Does not anger, by producing a violent rush of blood to the head and heart endanger the vital organs by an excess of fulness and dilation? Do not even joyful emotions, which in moderation tend to light up the countenance with that animated glow of pleasure which is so beautiful to behold, when carried to excess sometimes occasion the destruction of life? Disappointment pines away. Grief drags its slow length along. They cause a deathlike paleness to overspread the countenance, by weakening the vascular system, and obstructing the circulation. The patient is seen to heave deep sighs and struggle for breath, the blood, which no longer circulates freely, being collected in the larger vessels to repletion, and gorging the lungs."

"Let every one, who wishes to become a successful practitioner, study to make himself acquainted with the source of those thousand emotions of the mind, which set the bodily machine in motion, at one time propelling it violently forward, at another holding it back in torpid inaction. So much importance indeed do we attach to the study, that few physicians we believe will be found to have risen into eminence, and maintained an extensive practice, who neglect the philosophy of morals."

"But when I recommend an education which will enable the practitioner to deal with the affections and emotions of the mind, by means of his philosophical knowledge of men and things,—a knowledge which "*interdum medicâ plus valet arte*,"—let me not for one moment be supposed capable of undervaluing an indefatigable and complete study of chemistry, anatomy, and physic: a study, in short, of whatever is necessary to constitute an accomplished practitioner. For though, as I just mentioned, many cases may defy the usual applications of the learned sons of *Æsculapius*, and must be dealt with by a reference to the emotions and perceptions of the mind, yet it will not be doubted, that instances without number occur of complaints which depend for their cure entirely on skill in the properties of medicine, and on their judicious application, in conjunction with a knowledge of the mechanical structure of the body."

Resolutions of the usual description, such as of thanks to the several gentlemen by whom this Institution was upheld and benefited, including of course the Rev. Chancellor Law, and Dr. Edward Johnstone, the Chairman, were then proposed and passed unanimously.

The Examination of the different classes for the Prize Medals was conducted by Dr. Steward, of Droitwich, Dr. Conolly, of Warwick, Mr. Tyrrell, of St. Thomas's Hospital, London; and for the Demonstrator's Prize, by Mr. L. Parker. The successful Candidates were—

Class.	Student.	Student with
<i>Practice of Physic.</i>		
Silver Medals,	{ Mr. F. Allday, Mr. J. V. Solomon.	Mr. Green. Mr. Taylor.
<i>Materia Medica.</i>		
First Silver Medal,	Mr. J. R. Maurice.	{ Mr. Starkey, Westbromwich.
Second Silver Medal,	Mr. C. S. Meeke.	Mr. Porter.
<i>Anatomy.</i>		
First Silver Medal,	Mr. J. Harmar.	Mr. Broomhead.

Class.	Student.	Student with
<i>Surgery.</i>		
First Silver Medal,	Mr. J. Harmar.	
Second Silver Medal	Mr. J. Ward.	{ Late Mr. Waterhouse, Bilston.
<i>Chemistry.</i>		
First Silver Medal,	Mr. A. Wright.	{ Mr. Wright, Deritend.
Anatomical Demonstration's book, }	Mr. J. Harmar.	

The lecturers and examiners were afterwards entertained by the students at dinner at Dee's Royal Hotel, Sir Eardley Wilmot, Bart., M. P., in the chair; where with much conviviality was mingled science and philosophy, especially the enlarged and peculiar knowledge required for successfully pursuing the practice of surgery and medicine. The principal speakers were the Chairman, Mr. Sands Cox, Dr. Eccles, Edward Johnstone, Esq., Dr. James Johnstone, Dr. Conolly, of Warwick, Mr. T. Langston Parker, Mr. E. T. Cox, Dr. Booth, the Stewards, &c. &c.

As an incentive to emulation, that mainspring of youthful exertion, Dr. Booth begged to offer a gold medal to the pupils of the School, for the best Clinical reports of cases treated in the Birmingham Hospital, for which excellent Institution he should ever retain the strongest attachment. Such reports would be required to be complete, and he reserved to himself the privilege of defining more particularly the conditions of his offer. A gold medal was previously offered by J. Meredith, Esq., and ten guineas by the Rev. Dr. Arnold, Head Master of Rugby School, for Essays on medical subjects.

Shortly before eleven o'clock the Chairman vacated his seat, but the evening's festivities were prolonged to a much later hour. The students present were nearly one hundred in number.

BIRMINGHAM PHILOSOPHICAL INSTITUTION.

THE Literary and Philosophical Society connected with this Institution terminated its Session on the 7th of September last, and at its different meetings during the summer, some interesting and valuable papers were read to the members. The first paper read to the Society was one by Mr. S. Beale, on some branches of the statistics of Birmingham; in which the author pointed out the relative increase and distribution of the population in the several districts of the parish, as compared with each other, and as compared with some other places. He also entered into very minute details respecting both the amount and number of the parochial assessments, of which the following were the general results. The total number of assessments to the parochial rates are 30662, which the author divided into three classes,—

1st—Those assessed at £12. and upwards per annum.

2nd—Those assessed at £5. and upwards, but less than £12. per annum.

3rd—Those assessed at less than £5. per annum.

The amount of Poor Rates is about £44 000. per annum, which is paid in the following proportions, by these three classes:—

Number of assessments of the 1st class	4374	Amount contributed by this class	£31900
Number of assessments of the 2nd class	10351	Amount contributed by this class	8400
Number of assessments of the 3rd class	15937	Amount contributed by this class	3700
<hr/> 30662		<hr/> £44000	

The amount of the Highway Rate is £11000. per annum, of which the first class pays £9500., and the second class £1500. The Lamp and Watch Levy is £9000. per annum, of which the first class pays £8000., and the second £1000. The other parochial rate, that for the Town Hall, amounts to £3000. per annum, and is paid entirely by the first class of assessments, or those assessed at £12. and upwards per annum. It appears, therefore, that one-seventh part only of the whole number of assessments contributes three-fourths of the whole amount levied; whilst the third class, constituting more than half the assessments, pay only about one-sixteenth: thus—

	No. of Assments.	Poor Rates.	Highway Rate.	Lamp and Watch Rate.	Town Hall Rate.	Total Rates Levied.
1st class,	4374 pay	£31900	£9500	£8000	£3000	£52400
2nd class,	10351 do.	8400	1500	1000		10900
3rd class,	15937 do.	3700				3700
	<hr/> 30662	<hr/> £44000	<hr/> £11000	<hr/> £9000	<hr/> £3000	<hr/> £67000

The two next communications to the Society were “On the Variations of Climate, and their effects on organized beings,” by Dr. Ogier Ward; and “On modern Improvements in Agriculture,” by Mr. W. Hawkes Smith. Both these papers contained much curious information, and they led to long and interesting discussions among the Members of the Society; but, from the nature of the subjects, they are not susceptible of any very condensed analysis.

A paper read to the Society by Mr. Wickenden, “On the Non-permeability of Glass by Water,” is given in another part of the present number; and the last communication read to the members in this Session, was by Mr. Russell; it was “An account of a Toad, found alive, imbedded in a solid mass of new red sand-stone.” As hitherto when facts of this kind have been brought before the public, they have been received with the greatest incredulity, we give the depositions of those who were present when the animal, in this instance, was discovered; and we may add that the block of sand-stone, together with the toad, may be seen at the rooms of the Philosophical Institution, in Cannon Street.

The following is a copy of the depositions:—

During the progress of the excavation through the Park Gardens, at Coventry, on the line of the London and Birmingham Railway, at about nine o'clock in the morning of the 16th of June, 1835, the workmen were engaged in removing the material to the depth of 11 feet from the surface, the upper

portion of the excavation consisting of, first, a stratum of soil, 18 inches thick; then a mixture of sand and clay, 3 feet thick; and the remaining depth of $6\frac{1}{2}$ feet consisting of masses of new red sand-stone, sound and perfectly formed, somewhat severed by backs and fissures, but still in large solid masses, obliged to be worked away by means of iron bars and wedges, and very frequently blasted by gun-powder.

Two of the workmen, John Horton and Thomas Tillay, having, by means of an iron-bar, loosened from the solid mass, near the bottom of the said 11 feet, a piece of rock about 18 inches long, 15 inches broad, and 5 inches thick, it was lifted up by Horton, and thrown by him towards the waggons which were in waiting to receive the excavated material and convey it to the embankment which was forming across the valley of the river Sherborne. The piece of rock, however, did not alight in the waggon, as was intended, but fell by the side of it, upon the bottom of the new-formed excavation, and was by the fall broken nearly through the centre into two parts, which lay upon the ground, about an inch asunder. Thomas Tillay immediately took up one of the fragments and threw it into the waggon, and was on the point of taking up the other when his attention was arrested by the sight of a toad in a cavity or cell in the face of the remaining fragment, and, instead of taking it up, he kicked it with his foot, which caused it to fall out upon the ground: he then called to his companion, and told him that he had found a toad in the stone. Horton having joined him, they examined the fracture of the other piece of rock, and found there a corresponding cavity; so that when the pieces were put together, although the stone was to all appearance perfectly solid, yet there was an oval or egg-shaped hole in the centre.

The other workmen, to the number of 30 or 40, soon collected to examine the toad. Its colour, when first seen, was a bright brown; in the space of ten minutes, however, it gradually lost its brightness, and the bright brown became almost a black. The animal seemed to labour under a severe oppression, as from heat or weight, or both combined, and gasped frequently. It was rather under the usual size; but it was plump, and apparently in good condition. During the day it remained in the possession of the men who found it, and was seen by many persons, and was often exposed to the sun and the warmth of the hand. The head appeared slightly injured, supposed to be occasioned by the breaking of the stone.

About four o'clock in the afternoon I visited the works, the toad was shewn to me, and I fitted one piece of stone upon the other, while the toad was in the recess, and found that the rock fitted closely, and observed no appearance of an opening, or fissure of any kind into the cavity, the stone on every side appeared perfectly solid and sound. A portion of the cavity was much more rounded and smooth than the other, being, as I suppose, the lower side upon which the toad had rested. Throughout the whole cavity there was a thin black deposit, or lining; but this was more visible on that side which was more rounded, and there were evident marks where this lining was scratched off, as by the claws of the toad.

The cavity was 3 inches long and $1\frac{3}{4}$ inches broad: the two pieces of stone, with the toad in them, were brought to my office that evening; and I endeavoured, by closing the fracture of the stone with clay, to exclude the heat and air as much as possible, in the hopes of keeping it alive as long as I could; this I succeeded in doing for more than three days. During this time, however, it was frequently exposed, as there were many persons who were desirous of seeing it; but it seemed to be gradually wasting away: the injury in its head also became much worse, and doubtless hastened its decay: it lived, however, nearly four days from the time of its discovery.

(Signed)

THOMAS L. GOOCH,

Resident Engineer to the London and Birmingham Railway Company.

We, the undersigned, John Horton and Thomas Tillay, declare that the above statement, so far as regards ourselves, is true.

(Signed) JOHN HORTON, *Navigator*, ✕ his mark.

(Signed) THOMAS TILLAY, *Navigator*, ✕ his mark.

(Witness) BARNARD DICKENSON, *Engineer*.

The following are the Lectures which will be delivered to the Members during the year 1835-36 ;—a course of five Lectures entitled "Popular Illustrations of certain mental Phenomena," by Mr. L. Parker, to commence on Monday, the 19th inst. ; and a course of six Lectures "On the early English Opera," by Mr. Edw. Taylor, to begin on Monday, November the 23d. This course is to be illustrated by the aid of several able vocal performers, under the direction of Mr. Munden. The Lectures after Christmas will consist of two by Dr. Corrie, F.G.S., "On the Atmosphere ;" one by Mr. Bloxham, of Rugby, "on the British Antiquities of Warwickshire ;" two by Mr. Mainwaring, "On Animal Mechanics ;" two by Mr. Hornblower "On Constructive Carpentry ;" together with other Lectures by Mr. Ryland and Dr. Ward.

BIRMINGHAM MECHANICS' INSTITUTION.

THE number of Members of this Institution varies much according to the season—an inconvenience and defect inherent in an association where subscription is *quarterly*. The parties who compose it have no efficient bond of union, and the expectation or the absence of Lectures that possess attractive qualities will suffice to make a difference of one hundred in four in the list of Subscribers. The season also has its effect, evening meetings in the summer are often interrupted by the naturally potent solicitation of out-door engagements, and it requires strong determination in persons whose employments give them but small leisure, to give up evening after evening of the most attractive months, to the pursuit of knowledge.

These considerations act more strongly with the adults, who do not avail themselves of the classes. The junior members consider their classes as a *school* which they are more or less urged to attend. There is, besides, the influence of emulation, and the prospect of prizes, to induce them to continue their exertions.

It were much to be wished that some additional motive could be discovered, to give greater cohesion,—more feeling of *membership* than at present exists,—to the entire body. The erection of a respectable building, arranged for the purposes of the Institution, and which should add to the existing establishment a well-supplied news

and reading-rooms, would do much to effect this ; but we fear the subscriptions to the fund for the attainment of this object advance but slowly. This is discouraging, but we cannot help thinking that if the project were well brought before the public and a vigorous canvass instituted, the required sum of £1000. which would suffice to fulfil the moderate wishes of the committee, might be raised in donations in a town like Birmingham.

The Classes have proceeded under their former superintendence, and the degree of order and attention which is observable, is truly gratifying. The Institution is much indebted to Mr. Daniel Wright, the superintendent of the classes of writing, arithmetic, mathematics, &c., for his sedulous, conscientious, and energetic attention to the work he has undertaken.

The *Drawing Class* is large, and has, during the present year, been ably conducted by a gentleman engaged in manufacture, who kindly rendered his services gratuitously, on the disinterested condition that a certain sum should be expended in the purchase of patterns. The spirit of this class has also received a further impetus from an intimation from Mr. Wyatt, the Secretary of the Society of Arts, that those pupils of the class who have attained to a certain proficiency in drawing the human figure, would be received as students in the Plaster Academy of the Society of Arts.

The Museum of the School of Medicine, consisting of specimens in natural history, and physiological and anatomical models and preparations, was liberally opened to the members of the Institution each evening during two weeks in the month of August, and was well attended.

The Lectures during the last quarter, have been—two on the Military Antiquities of Warwickshire, by Mr. Hawkes; one on the Rise and Progress of the Ancient System of Philosophy, by Mr. J. T. Smith; one on the Comet of Halley, by the Rev. M. Ward; four on Astronomy, by Mr. Young. For the ensuing three months there is a prospect of a short but interesting course on Natural History, prepared by Dr. Shirley Palmer; of some interesting Lectures on the Moral and Physical Peculiarities of the Human Species, from Mr. Watts, of Birmingham; and probably an arrangement will be made with the gentlemen who may be engaged by the Philosophical Institution, to repeat a portion of their Lectures to the Mechanics' Institution.

LIVERPOOL

LITERARY, SCIENTIFIC, AND COMMERCIAL INSTITUTION.

AMONG the institutions which the enlightened and improving spirit of the age has called into existence, the Literary, Scientific, and Commercial Institution, of this second metropolis of the British

empire, stands prominently forward, both in utility, and, considering its very recent formation, in promise of magnitude. Unfettered by prejudice and party feeling, it occupies an intermediate position between the exclusiveness of the Royal Institution, and the operative accessibility of the Mechanics' Institution; and while it attracts, by its varied arrangements, those who would otherwise pass away their vacant hours in inactivity or demoralization, it provides for the intellectual wants of a class of society—the merchants' clerks—that, however limited may be their means of commanding those aids without which study is a task of almost hopeless labour,—seem to require a greater range of information than the votaries of any other human pursuit.

This society has only just completed the first summer session, and its arrangements have been carried on chiefly with the view of testing, by experiment, the means by which a more fully organized winter session may be best conducted. Such, however, is the confidence that has been placed in the steady perseverance of the members, that it has obtained Lord Francis Egerton for its patron; Lord Sandon and Mr. Ewart, the two members for the town, for its vice-patrons; with the two rectors, and many of the most eminent merchants, and other influential gentlemen, for its president and vice-presidents.

The contribution of the members is two pounds per annum. For this they have the benefit of a library of reference and circulation; a reading-room, provided with the London and provincial papers, and periodical publications; a gymnasium, for occasional bodily exercise; and the unrestricted liberty of attending the lectures and classes. During the late session, lectures have been delivered on the Early Literature of this Country, by Dr. Mackenzie; on the Properties of the Atmosphere, by Mr. Sweetlove; on Botany, by Dr. Thorburn; and on Spanish Literature, by Mr. Du Lara.

The classes have consisted of a French class, conducted by Messrs. Black and Bekeart; an English class, by Mr. Mc'Gowan; and mathematical and commercial classes, by Mr. Tate. All the lectures, and a great portion of the direction of the classes, have been gratuitously afforded. A class has, also, been formed amongst the members, for the writing of essays and the discussion of subjects, proposed by them and sanctioned by the committee; it being among the regulations that one of the vice-presidents should preside at their meetings. We must close this article with the following brief allusion to an able and eloquent "Opening Address," delivered, from the chair, by Thomas Jeffreys, Esq., M. D., one of the vice-presidents.

The learned physician, after descanting, at some length, on the many advantages to be derived from this society, by young men employed in mercantile pursuits, proceeded to point out, in a very forcible and lucid manner, the benefits that would arise, more especially, from the "Discussion Class." Few individuals have the power of addressing public assemblies, in a manner calculated to arrest the

attention of their hearers ; a deficiency arising, in a great measure, from the almost total neglect of the study of elocution, at our public and private seminaries. The discussing, therefore, the merits of papers and essays, which is one of the principal objects of this society, will tend to conquer that nervous timidity which is the great obstacle in the way of an effective oral delivery, and will, no doubt, prove highly beneficial to the members of this Institution.

The worthy vice-president then proposed "The Question" for discussion at the next meeting :—

"Is the wealth of nations and the happiness of man, best promoted by the division of labour and singleness of purpose?—or by complicated employment and variety of pursuit?"

As our limited space will not allow us to give even an outline of the arguments advanced on each side of "The Question" by Dr. Jeffreys, we must reluctantly confine ourselves to the following short extract :—

"The mind of man is not only very elastic, but possessed of an expansive power, often unsuspected and unknown to the world, his associates, or even to himself, until it is called into action by either accident or design; and these powers may, and often do lie dormant during his whole life's existence, unless roused by some one particular stimulus or excitement. Physiologists well know that every organ of the body requires its own particular stimulus to call it into action; as, for instance, the food to excite the digestive power of the stomach, the atmospheric air for respiration, and even vitality itself for the circulation of the blood. Consequently, it cannot be very difficult to imagine that each separate cerebral organ will remain quiescent until its particular stimulus is applied for its action. The same general law of nature is applicable to the vegetable, as I have been hinting at existing in the animal kingdom; for as in the instance of *heat* being the stimulus requisite to rouse into life the chick in the egg, for preserving the progeny of birds and some reptiles; so if the seed of corn or other vegetables be placed in the earth so low—perhaps one foot deep—where the heat of the sun's rays cannot penetrate, the seed will be preserved, but remain dormant for years for want of its proper stimulant; but the instant you raise the seed so near the surface of the earth as to allow the sun's rays to act upon it, the natural stimulus of heat soon causes the germ to burst the bounds of its confined husk, and prepares the stem to grow and to fructify."

MANCHESTER MECHANICS' INSTITUTION.

A STATEMENT of the proceedings of this Institution was made in the month of July last, in the Theatre of the Manchester Mechanics' Institution, clear and satisfactory in every particular, and most encouraging to those populous towns which have not yet proceeded

further in their formation than laying down a plan in perspective. After reading the results, so beneficial, in every point of view, to the morals, the intellectual improvement, and the quiet happiness of as useful a class of men as any in the community, if these establishments do not become general, it will be a mark of inferiority and a reproach, most unworthy of rational beings endowed with capabilities and reason, and thus stimulated, too, to active co-operation by the force of example.

At a general meeting, at which Lord Brougham was present, an address was delivered by the President, B. Heywood, Esq., and a statement of the proceedings since the last report, was read by the Secretary. From this report we learn that when the Institution had been established five years, the number of members was 384, and at the close of the last quarter, after an existence of eleven years, the number amounted to 1232! In the year 1829 the receipts were £832. 10s. 5d., and in 1835 they had increased to the very liberal sum of £1960. 4s. 9d.! and after liquidating the whole of the expenses of library, furniture, lecturers and teachers, and a variety of other necessary items, on the 13th of July there was a balance in the bank of £90. 16s. 1d. This is a most gratifying statement, and proves what can be accomplished in undertaking measures of popular utility in a right spirit and a well-adapted and corresponding system. The projectors, the founders of these beneficial schemes for the benefit of that important class, the artizans, are, undoubtedly, the most munificent benefactors to the human race. To withdraw useful citizens from demoralizing scenes of dissipation and vice, by supplying them with sources of rational employment for their hours of leisure—to diffuse useful knowledge, and afford them facilities of instruction in those principles which regulate their respective occupations—to increase their prosperity, by drawing out their mental resources, and applying them usefully to the cultivation of the arts and sciences, and the various embellishments of life—are objects incalculable in the amount of their consequences, and worthy of the real friends of humanity; for by these means are human improvement and human happiness consolidated and made perfect.

The remainder of the Secretary's report was also highly satisfactory; and at its conclusion a short examination of the first class of the boys' day school, consisting of about twenty, took place. A variety of questions in the elementary rules of integral and fractional arithmetic, dictated by the teacher, were rapidly written on slates and solved by the pupils; and in answering, by mental calculation, intricate questions in proportion, practice, and interest, they evinced great proficiency and quickness. The President then remarking that the examination had proceeded far enough to convince the meeting of the excellence of the system and the proficiency of the scholars,

Lord Brougham rose amidst the loud cheers of the assembly.—After expressing his high gratification at the beneficial results of these institutions, the success of which he had so much at heart, his

Lordship passed some well-merited encomiums on the very superior excellence of this Institution, as compared with many others which he had visited; and declared that the proficiency of the boys was superior to any similar establishment, excepting, of course, the great London Borough Road School. His Lordship observed—

“There are two systems which ought always to be set in view in teaching; shunning the one, setting it up as a beacon to be avoided, and placing the other before you as a light to direct your course into the harbour of knowledge; the parrot system to be avoided as the rock, the beacon, and the shoal; and the intellectual system, the reasonable, rational system, to be steadily pursued and substituted for the former. And there is no greater error committed than that of those teachers who make a great display of boys’ memories, exercising that faculty only, by means of which they may make very accomplished parrots with a great deal of trouble and waste of time; but “quickly come, lightly go;” that which they learn so easily they lose shortly, and even while they retain it, find it of no use whatever, for it does not imbue their mind or penetrate their faculties. * * * * Who can doubt that it would be of the utmost possible practical use to mechanics in their several trades, to know the principles upon which those engines are constructed, by becoming acquainted with so much chemistry, for example, as may teach them the nature and properties of steam, of refrigeration and expansion, of the manner in which heat works and cold operates, and learning as much mechanical science as may explain the grounds of the various mechanical contrivances which that engine exhibits. I say it is of positive use and actual profit to them to know these things. At present they put up the cylinder, they fit the piston into its place, and adjust that exquisite contrivance of Watt, the parallel motion; but they do these things mechanically, by rote, and according to the parrot system, which I have lately said a word about in reference to boys. * * * * I am sure I should do a very useless thing, if I were here to enlarge upon the benefits of education. They are admitted by all, even by those who formerly sneered at them. Some people tell us that “education won’t fill people’s bellies,” and trash of that sort. Why, they might just as well complain of the baker or the butcher, because with their beef or bread they do not fill people’s minds.—(Laughter.) But every one knows that “man lives not by bread alone,”—that knowledge leads to skill, that skill leads to useful and lucrative occupation, and that the gain derived from lucrative occupation enables men to get the staff of this mortal life, after getting the staff of that immortal life which improves and strengthens his better part—his mind. Therefore it is not true to say that learning does not fill people’s bellies, as some grossly and stupidly say; for it puts the staff of common animal life within our reach: so the bread and beef got through its means ultimately tend to support the mind, inasmuch as without the support of the animal part, the incorporeal portion of our nature would have but a small chance of surviving.—(Laughter.) But now, whatever improves men’s minds tends to give them sober and virtuous habits; and with the knowledge of the community, clear I am that virtue is assuredly certain to be promoted; and I am quite confident, that, with the knowledge of men, the rights of men,—I mean their indefeasible rights of every kind, the rights which they have to civil liberty and to religious liberty, the greatest of earthly and social blessings,—are sure to be infinitely promoted; nor do I know of any more certain mode of reforming a country—any better way of redressing her grievances—than giving education to her people.”

At the conclusion of this address the noble Lord was enthusiastically cheered by the members and friends of the Institution. His Lordship was subsequently conducted, by the Directors and Com-

mittee, through the library, new reading-room, and the several class and apparatus rooms, in which he appeared to take great interest; and previously to entering his carriage expressed himself highly gratified with the general arrangements of the Institution.

The Manchester Mechanics' Institution was established in 1824. It is governed by a Board of Directors, chosen annually from those subscribers who are above twenty-one years of age, and who have been two years members. The qualification to vote consists in being a subscriber of six months' standing, and above the age of eighteen. The subscription is £1. per annum, which may be paid by quarterly instalments; and the number of members, honorary and ordinary, is about 1,200, of whom many are under eighteen years of age.—About half of the ordinary members avail themselves of the evening classes; in which are taught arithmetic, grammar, writing; figure, landscape, and flower drawing; architectural drawing, mechanical drawing; French, algebra and geometry, and vocal music. Classes for German and Latin are also established. The library contains upwards of 3000 volumes. A reading-room is attached to the library:—and there is a Theatre for the delivery of lectures. A boys' and girls' day-school is established, conducted on the plan of the Edinburgh sessional school.

It is a very gratifying fact, that many individuals attribute their advancement in life to the opportunity of improving themselves which this Institution has afforded.

THE NEW MECHANICS' INSTITUTION, MANCHESTER.

THIS Institution was founded in 1829. The number of members is about 130, and the subscription of 5s. per quarter entitles them to all the benefits of the establishment. There are occasional lectures, and, in the evening classes, instruction is given in reading and writing, arithmetic and mathematics, English and Latin grammar, mechanical and architectural drawing, and landscape, figure, and flower drawing. The library contains about 600 volumes, and the weekly delivery is about 50 volumes. A Sunday evening school is attached to this Institution, in which forty young women are taught reading and singing.

These Institutions occupy a very prominent place among the means of education in Manchester, as affording opportunities of gaining an acquaintance with higher branches of knowledge than can be supplied in ordinary schools; and offering their advantages to persons of all ages, rank, situation and pursuits. The subjects here studied are taught by men of judgment and ability, and the affairs of the Institution conducted by a body of Directors who are well able to judge of the merits of different plans of instruction, and have ample opportunities of observing and comparing them. "Few things," observes the Report of a Committee of the Manchester Sta-

tistical Society, on the state of Education in the borough of Manchester, "would tend more to diffuse the advantages of education among the people, than the extension of similar Institutions to other parts of the town, and to other towns throughout the country, more especially if the terms required, the subjects taught, and still more the manner of teaching them were adapted to interest, attract, and instruct the lower orders,—the really labouring classes of the community. At present, the plan of such Institutions, and the whole course of instruction, is adapted to, and chiefly attended by, a class considerably superior to the really operative class; and though not, perhaps, on that account less useful, except as embracing a less numerous body of men, it is much to be regretted that Institutions which might be so well fitted to benefit both of these classes of men should not extend their advantages to both."

For the reasons thus stated, for the universal good it would accomplish in the amelioration of the present condition of the artizan, for the progressive cultivation of intellect, and for the consequent increase of happiness which must be thereby so widely diffused through classes now too often debased by ignorance and its attendant vice, we energetically recommend the admirable Institutions to which we have been thus alluding.

WORCESTERSHIRE NATURAL HISTORY SOCIETY.

At a meeting of the Council of this Society, the Honorary Secretary, (in the absence of the Honorary Curators), enumerated the following among other donations, received since our last announcement:—

Jardine's edition of Wilson's American Ornithology, 3 vols. 8vo., with coloured plates; *Nycticorax Europæus*; *Nucifraga Caryocatactes*; *Lagopus Mutus*; *Parus Cristatus*; *Sterna Cantiaica*; *Fringilla Nivalis*; *Falco Subbuteo*; *Totanus Ochropus*; *Lanius Minor*; *Menura Novæ Hollandiæ*, a specimen of the Lyre Pheasant from New Holland, with several other foreign birds, from B. L. Baker, Esq., Hardwick Court, near Gloucester: nearly 100 specimens in geology and mineralogy, from the coal, green sand, chalk, and other formations in the counties of Hants, Wilts, Somerset and Devon, with several others,—rare and singular,—from the continent, from Thomas Meade, Esq., Chatley Lodge, Bath: various geological specimens, from J. C. Kent, Esq., Levant Lodge: and two of the Dudley lime-stone, from Mr. E. Gillam, Foregate-street: a nest of the *Vespa Campanaria*, found at Walkeringham, Notts, from a gentleman resident there: and also numerous entomological and botanical specimens, from the Rev. F. Orpen Morris, of York.

The Secretary likewise announced several donations to the Building Fund; and we trust a sum sufficient to complete the erection of

the Museum, which from the daily acquisition of specimens in every department of Natural History is now become indispensable, will speedily be raised.

The course of Lectures commenced on the 29th of September, with an extremely interesting "History of Comets, their appearances, the phenomena to which they give rise, the nature of Comets in general, and an examination of the hypotheses respecting them," by the Rev. Thomas Webb; which will be followed by Lectures "On the Fine Arts of Ancient Greece, and their Moral Effects on Civilization, by H. C. Boisragon, M. D.;" "On the Powers of Instinct and Reason displayed in the Animal Kingdom, by J. H. Walsh, Esq.;" "On the Upper Strata of the Secondary and on the Tertiary Rocks, with a general description of their attendant Fossils, by E. Morris, Esq." and the Session for the present season will conclude on the 1st of December, with a general Meeting for the reading of various interesting scientific Papers.

SHROPSHIRE AND NORTH WALES NATURAL HISTORY SOCIETY.

Well and wisely has the great Magician of the North somewhere observed, that "the Book of Nature, that noblest of volumes, always lies open before us, where we are ever called to wonder and to admire, even where we cannot understand." Deeply sensible of the truth and beauty of this sentiment, and fully aware of the vast and beneficial effects which the well-directed study of the works of creation invariably produces on the moral and intellectual improvement of Society, we contemplate, with feelings of high gratification, the formation, in almost every portion of this enlightened kingdom, of Societies having for their immediate object the diffusion and cultivation of Natural Knowledge.

Amongst other recent institutions of this kind we are happy to announce the establishment of a Natural History Society in the adjacent county of Salop, of which the prospectus and rules are now before us, and from which we propose to present to our readers a condensed statement of the benefits contemplated, and likely to arise from its formation.

The Society is entitled "the Shropshire and North Wales Natural History Society," and has for its object the formation of a Museum and Scientific Library of Natural History, Antiquities, &c. and the collection, from every quarter, of accurate information respecting the Natural and General History of this important District,—its topography, statistics, climate, and meteorological phenomena; its geological structure, mineral and organic fossils; its mines and collieries; its various animal and vegetable productions.

The Museum, which has been founded at Shrewsbury, as the most central place, is principally designed to illustrate the Natural History of the District, in its various branches of geology, mineralogy, zoology, and botany, by the gradual formation of complete and systematic arrangements of its productions, in each of these departments. It will also be open to other objects of scientific interest, and, in particular, it will be a suitable repository for such remains of antiquity as are found within the district, or illustrate its general history.

The Library will consist of books illustrative of Natural History, Antiquities, and especially such works of reference as the funds of the Society will admit of being purchased, for the illustration of the objects in the Museum, or which may be presented by the members and friends of the Institution.

In order to place the Institution on the most liberal basis, and to render it of the greatest possible public advantage, the property of the Society has been vested in the Lords Lieutenant of the county of Salop, and of the several counties of North Wales, as Trustees for the permanent use and benefit of the district at large, by which arrangement the perpetuity of the Institution is secured, and the possible dispersion of the Museum at any future period effectually guarded against.

The affairs of the Society are under the management of a council, consisting of a president and other officers, elected annually, and twelve subscribers, of whom six retire by rotation and six are elected in their stead at the annual meeting.

All persons proposed to the council by two subscribers, and contributing one guinea annually, are members of the Society, and have the privilege of admission for themselves and families to the Museum and Library, and of introducing visitors.

To diffuse a taste for science, periodical meetings of the Society will be held, at which scientific communications will be received and read, and popular Lectures delivered on the various branches of Natural History.

In addition to the more local objects of the Society, the Museum will be open to the reception of any specimens from distant localities, with which the friends of science in various quarters may be induced to enrich it, and which may serve to complete the series and enhance the scientific value of those indigenous to the district. For this purpose the council have authority to effect exchanges of the natural products of Shropshire and North Wales for specimens furnished by the cabinets of Societies, or individual collectors in other parts of the world.

Of the progress which the Society has made since its first establishment (26th June, 1835), we are enabled to recount the most flattering report. The number of members is now 149, amongst whom are enrolled several of the nobility of the county, and many of the most scientific and eminent men in the district. The museum has already been enriched with numerous donations in every de-

partment of Natural Science, most of which are very valuable, and all peculiarly interesting and instructive. The friends of the Institution, in all quarters, are so peculiarly strenuous in its welfare, and their exertions are so perseveringly directed to the collecting of the natural curiosities of their respective neighbourhoods, that from the contributions to the Museum, which are daily increasing, and the liberal promises which the Society has received, there is every probability that in a short space of time, a general collection will be formed which shall exhibit at one glance to the scientific stranger the varied natural treasures of this wide and most productive district, and enable the Society to rival in usefulness and extent the Natural History Societies of other places.

Interested as we are in the success of all Scientific Institutions, we shall from time to time present to our readers a summary of the proceedings of this promising Society.

CRITICAL NOTICES OF NEW PUBLICATIONS.

The Life of Samuel Johnson, L. L. D., by James Boswell, Esq.; to which are added Anecdotes by Hawkins, Piozzi, Murphy, Tyers, Reynolds, Steevens, &c., and Notes by various hands.—Vols. 5, 6, and 7. In 8 volumes. Murray, Albemarle-street, 1835.

However minute, almost ridiculously minute, Boswell has set down the sayings and doings of the great lexicographer, his biographical memoir of one of the most eminent of English scholars will always be a source of interest and instructive amusement. Boswell, unlike first-rate literary men, had not the grand art of sifting the corn from the chaff,—he was neither a man of genius nor of erudition; like all unskilful writers he has dwelt on subjects of trifling import, and given as much space to the most common-place parlance as he has devoted to that more important part which relates to grand conception, intellectual acumen, and profound learning. That he was wholly devoid of good taste, too, is evident from the egotistical manner by which almost every page is distinguished. With all its faults, however, Boswell's diary will still be read, and if only for the numerous anecdotes scattered through its pages, independently of the great luminary of learning, whose virtues, errors, and weaknesses, it so glaringly exposes, it will continue to be read as long as literary renown shall be cherished, or the English language shall retain its present strength and purity. Although Boswell could not attain distinction from his own abilities, he did not disdain to seek it through the medium of others, and was content to play the grave-

digger to a Hamlet whose transcendent pre-eminence he could never hope to imitate. How few men there are, in our day, who would sacrifice their time, and health, and respectability, to become the merely tolerated listener, the butt and plaything of any man, how effulgent soever might be his fame! the spirit of independence had not, at that day, we presume, the predominating power which is so obstinately maintained in our time. But we must not forget that had Boswell thought thus, we should never have seen the particulars of a life which, with all its outrageous faults, will always be found on the shelf of every respectable library. We must protest, however, against all writings of this description. It is most unfair and unjust, for men under the mask of kindness and good-nature, to worm themselves into the unsuspecting confidence of others, and then, to give an *eclât* to the writer's obscure name, publish those failings incident to humanity which ought to have been most scrupulously shielded from the world's observation. Had Johnson been aware of Boswell's intention, he would have spurned him from his presence for his premeditated dishonour. All literary men have their moments of unguarded weakness;—long and extreme tension of the intellect always leads to corresponding debility; and the relaxation of a luminous mind, from the obvious contrast, when minutely detailed in the shape of narrative, must partake of a certain character of imbecility, at the bare mention of which the sensibility must be inconceivably shocked. In ordinary life these transitions are usually held sacred—ought they not, then, to be held equally sacred amongst literary men, whose lives, and actions, and motives are scrutinized usually with such minute circumspection, and often with such unsparing severity? How much more delicately and generously have Thomas Moore, Walter Scott, and others, modelled their lives of departed genius!

This edition differs from most others in the attraction which it possesses of a fund of most amusing anecdotes by Hawkins, Piozzi, Murphy, Tyers, Reynolds, Steevens, and various other eminent characters. To this advantage, and it is a very considerable one, may be added that of its being, without exception, the most elegant edition of the size ever yet submitted to the public admiration. It is embellished with some exquisite plates and vignettes by Finden, in his best style; and these, with the letter-press and paper, do infinite credit to the taste and liberality of the eminent publisher.

The Gardener's Magazine, and Register of Rural and Domestic Improvement. Conducted by J. C. Loudon, F. L. S., H. S., &c. September, 1835. London: Longman and Co.

There are, as usual, some very excellent notices in this monthly publication of Mr. Loudon, including a highly interesting article relating to Fonthill Abbey and its talented projector, from which we intended to have given an extract had we not been prevented by a pressure of other matter.

The History and Antiquities of the Cathedral Church of Worcester : illustrated by a series of engravings of views, elevations, plans, and details, of that edifice : including an architectural description of the Church, and Biographical Anecdotes of the Bishops, and of other eminent persons connected with the Cathedral. By John Britton, F. S. A., M. R. S. L., &c., &c. Longman and Co., 1835.

FROM the prefatory essay we glean information connected with this work, which sets forth the risks, the losses, and the miseries of authorship, in a very clear and convincing manner ; and points out the futility of risking health and fortune in literary undertakings, without first securing that patronage by which alone a successful issue can be fully attained. In accounting for the delay in the execution of the work, the author observes—" Had generous patronage and kind attentions been manifested towards the author, in the early progress of his work, he would most certainly have been animated to greater exertion—to more ardent zeal ; but the coldness, and even the contumely, of the dignitaries of some cathedrals ; the ingratitude, and even impositions, of certain parties who were early engaged in the work ; and without the prospect of a fair remuneration for bodily and mental labour, it is not surprising, nor very reprehensible, that he became sometimes languid—sometimes indifferent. But for the cordial and friendly assistance of the respectable publishers who first embarked in the work, it would certainly never have reached its present size and quality. During its progress, more than *twenty thousand pounds* have been expended on its execution, and thus English art, literature, and trade, have been all promoted : although a large portion of that sum has necessarily reverted to the state, in taxation. Three hundred and ten drawings and engravings have been executed for its embellishment, whereby some of the most eminent artists of the country have acquired fame and liberal remuneration. Paper-makers, stationers, printers, binders, book-sellers, and others, have derived profits, whilst eleven public and *private* libraries of the kingdom have had their literary stores increased, by exacting from the author so many copies of this expensive publication."

The author candidly admits that he has grievously erred against time, and taxed the patience of friends ; but his excuse must disarm reproach when he asserts that repeated attacks of illness have reduced his energies, and sometimes even his capabilities of composition :—that the eyes and memory often give notice that they have been over-worked, and claim a little respite ; that many public demands are made on his time, beside those of a domestic and friendly nature ; and that these have conspired, for the last three or four years, to detach him often from the Cathedral Antiquities.

In Mr. Britton's observations on the facilities and repulses which he experienced in his meritorious endeavours to collect every information likely to add value to his work, we are pained to notice some

October, 1835,—VOL. III, NO. XIII.

M.

comments on the alleged illiberal reception which attended his visits to the cathedrals of Exeter, Hereford, and Wells. Indeed, he expresses deep regret for having visited these cities for the purpose of writing histories of their respective churches. He says that "with apparently tardy reluctance leave was ultimately granted at these places for the author and his draftsmen to have ingress to the cathedrals to make notes, sketches, &c.: but they were otherwise treated as impertinent intruders and suspicious personages. Among other consequences arising from such treatment, the author was obliged to commission a friend to visit Exeter, with two other artists in 1825, and thus incur additional and even heavy expense. Owing to a want of the requisite facilities for properly exploring the two cathedrals of Exeter and Hereford, the outlay, caused by this prohibition, exceeded the receipts by at least five hundred pounds!" This is one of the items, and certainly not a pleasing one in the annals of "the Cathedral Antiquities," which, the author observes, Mr. D'Israeli may, without much impropriety, introduce into a new edition of his "Calamities of Authors."

On this unpleasant assertion, we have to observe that the worthy and intelligent author might not, possibly, have been at the moment in the most perfect state of quiescent feeling. Authors are sometimes very irritable, and usually more from sensitiveness than absolute provocation—they have a thousand strange conceits when their brains are teeming with visionary speculations, and attended often with an absence of mind, most marvellous to men of a cooler temperament. It would be charity towards the accused, to imagine that Mr. Britton was under a delusion at the moment, only that we cannot exactly reconcile this set-off against the *three* distinct and positive charges. There must be an error somewhere—we should be very unwilling to believe that in either of the dioceses named, there was the least intentional lack of courtesy from a church dignitary to any man of lettered fame—more especially to a writer of such well-known and acknowledged celebrity as the author of "the Cathedral Antiquities of England;" and "the Architectural Dictionary;"—but his statement is too circumstantial and precise for doubt—we must attribute it, therefore, to circumstances which may possibly yet admit of some favourable modification or reconstruction.

We regret to learn that the volume before us, "The History and Antiquities of the Cathedral Church of Worcester, is the last of the author's series, and that the publication of the records of the seven remaining Cathedrals of Carlisle, Chester, Chichester, Durham, Ely, Lincoln, and Rochester, which would have completed this important work, is wholly abandoned. It is due to the talented author to state, however, that before he came to the determination of closing his work with the present volume, he addressed letters to each of the prelates, and to all the deans and chapters of England, explaining the state and nature of the publication, and the necessity of relinquishing it unless he felt secured against pecuniary loss.

"In the month of March, 1833, a printed address and a respectful letter, was sent to *forty-four* prelates, and deans and chapters; to which the author received only *six* replies! Two bishops offered to take in the work, two others were willing to subscribe for the cathedrals, over which they presided; only one chapter, (Norwich) requested to possess the whole series; and another offered every assistance to the author, towards promoting a complete history and illustration of its own church." Such a chilling, dreary prospect, was not calculated to tempt the author further in his Cathedral expedition.

"When the education, associations, and number of wealthy clergymen in the kingdom are considered, particularly of those connected with, and deriving handsome incomes from the cathedrals, it might be fairly presumed that from three to five hundred of them would be desirous to possess a literary and graphic work expressly devoted to elucidate the histories, and illustrate the architecture of those edifices; it is however asserted that not more than one hundred of the clergy are purchasers of this publication, and that its *real* friends and admirers are persons of moderate incomes, who are mostly professional gentlemen and amateurs, and some ladies."

The Cathedral of Worcester, the author affirms, has suffered as much by injudicious restorations and repairs, as by the injuries resulting from time and warfare. Many parts of its walls, being constructed with a bad material, a loose red sand-stone, have crumbled and become ruinous; the central tower has been chipped, and in part newly faced, whilst its once fine parapet and open pinnacles have been reconstructed, without much regard to the original workmanship. The interior is wofully disfigured by white and yellow washing.

Our readers will perceive that this is not a consecutive narrative—it is related in a desultory manner as the facts presented themselves, or rather, we should say, as we chanced to light upon them on indiscriminately turning over the pages of the prefatory essay: some of them, however, are so very cogent, and others, indeed most of them, so very important, that we could not refrain from extracting and commenting as we proceeded, without regarding order and method with the strictness usually required. In this manner, therefore, we shall now continue. Mr. Britton's comparison of the advantages of other liberal professions above those of the author, is drawn with all the force and bitterness of truth, and assimilates with the notions of the elegant and eloquent E. L. Bulwer, who, in his interesting work, "England and the English," says on this subject—"Literary men have not with us any fixed and settled position as men of letters. In the great game of honours none fall to their share. We may say truly, with a certain political economist,— 'We pay best, 1. Those who destroy us—generals; 2nd. Those who cheat us—Politicians and quacks; 3rd. Those who amuse us—singers and musicians; and, last of all—those who instruct us.' " "All the officers of state, and most public servants," he observes, "after a

certain length of service, retire upon pensions, either proportionate to the extent of time, or to the particular rank and station of the party. Not so the *author*—not so the man whose whole life may have been devoted to literature. However eminent his talents—whatever may have been the amount and utilities of his writings,—unless exercised in the cause of a political or religious body,—he rarely meets with either honours or fortune. At the bar, in the church, in the army, the navy, and government offices, reasonable industry, with moderate mental powers, are frequently advanced to high titles—to great wealth. Such has been, and still is, the state of society in England: and if the author, the professional and long-tried author, should shew that he is not justly treated, and has not a fair chance to partake of the honours and rewards, which are supposed to be national, it is not likely that authorship will be cultivated by the prudent, or be ardently pursued by those who can in any other way employ their talents. At the present moment, the number of authors in England is immense, and the extent and variety of their abilities exceed that of any other age or country: yet their pecuniary remuneration is comparatively small. There is, perhaps, no class of writers better paid than those engaged in the popular periodicals; and it may be safely said that there is no one profession in which more mental talent is required and exerted, and where the labour is more incessant and harassing. To furnish savoury food and poignant sauce for the ever-craving appetite of the daily political reader,—the quidnunc of the present age—is the imperious duty of the leading journalists of our times; and when we read some of the rapid essays, the midnight out-pourings of these writers, we are delighted and astonished at the knowledge and eloquence displayed. Yet we never hear of such men being advanced to titles, rewarded by fortunes, or complimented by public monuments. ‘They manage these things better in France.’ There, Barons Cuvier, Thénard, Lussac, and Poissou, have enjoyed annual grants from the government to the amount of £5,420.” Very recently, however, there has been something done by the government, or by its high officers, to confer substantial compliments on literature and science. Southey, Airy, Sharon Turner, Thomas Moore, and others, have had pensions granted them; and Sir John Herschel, Sir David Brewster, Sir Henry Ellis, Sir Harris Nicholas, Sir Frederick Madden, and Sir Francis Palgrave, have been honoured with titles.

In the event of the decease of an author, or a partner in a publication, it often becomes necessary to sell the work by auction, for the purpose of closing accounts. The death of his estimable friend, Mr. Taylor, will explain the reasons why some of the author’s and his partner’s publications have been transferred to new proprietors, and retailed to the public at reduced prices. “It is well-known that authors, as a body, are not rich. If they publish their own works, they rarely increase their riches: on the contrary, it often leads to ruin. The annals of the “Literary Fund Society,” furnish many lamentable examples of distress, arising partly from that cause.

It is also known, at the present time, that the respectable publishers of London are the best, if not the only, patrons, on whom authors can rely for pecuniary remuneration. These publishers are men of business, are merchants of adventure, who occasionally advance capital on unproductive articles. Like all other tradesmen they seek to obtain profit on their wares; and one of the modes of doing this, which has prevailed for some years past, is the disposal of the stock, coppers, and copy-right of a book, after the market has been fairly supplied through the regular systematic channels."

So far—prefatory and discursive observations—we now approach the body of the work, which at the outset we admit to be a task of delight. The correct and admirable delineations of C. Kitton, have been exquisitely engraved by J. Le Keux, and are certainly beautiful specimens of art. There are altogether sixteen, exclusive of a vignette by S. Williams. The typographical department, too, will rather add to than diminish the long-standing fame of the Chiswick press.

New facts and illustrations, calculated to elucidate the history of the See, the architecture of the edifice, and other local events are adduced, which serve to mark many national characteristics of former ages—not drawn from the resources of Abingdon, Thomas Green, and other writers on the city and its minster, although their authority is often quoted, but chiefly extracted from the archives at the fountain head, with such commentaries as genius and an intimate knowledge of the difficult subject only could supply. The early history of the see is traced with considerable minuteness, and we think, from our own knowledge of the subject, with much accuracy; and the historical notices of the facts, during the Anglo-Saxon dynasty, till the complete establishment of the Normans in England, rest on a carefully examined foundation. In the time of King Alfred, before A. D. 900, we find a fact of consequence relating to Worcester and its Cathedral. Bishop Werefrid applied to the monarch to have the city fortified; upon which occasion, one half of the royal dues of tolls from the market, or street, was vested in the see. Green thinks that Edgar's gate-house was erected about that time. The prelacies of Saints Dunstan and Oswald are important in the annals of this church, as well as in those of the kingdom. During their dominion great alterations were introduced into the monasteries, by the stern, persevering, and uncompromising conduct of these advocates of celibacy.

The origin of the present edifice is not satisfactorily defined: some writers ascribe it to St. Oswald, and others to St. Wulstan. "The oldest part of the present edifice is its Crypt, which may probably be part of Oswald's church, or it may have been re-built by Wulstan; but there is neither document nor internal evidence sufficient to prove by which of those prelates it was designed and constructed. Its Norman character is shown in the view (plate X), and in the ground plan (plate I.) The transept, and particularly its eastern wall, through which there were entrances to the crypt,

and also two door-ways, with semi-circular arches, to the vestry on the south side, and to the sacristy on the north, certainly appear to be the most ancient part of the church. The former arch is shewn in the title-page. In consequence of the fire, which consumed some of the cathedral in 1202, the visit of commissioners from the papal see, in the following year, to inquire into the refuted miracles ascribed to Wulstan, and the unqualified report of their truth, of King John's pilgrimage to the canonized bones of the newly made saint, and of other circumstances of great local notoriety, it is probable that the whole *east end* of the cathedral was either rebuilt, or adapted and altered to the prevailing fashion of architecture, about this time. It seems evident that it was newly dedicated in 1218. —The interment of the body of King John in this cathedral (A. D. 1216), was an event of no small importance to the monastery and see, at the time, nor of less local consequence afterwards. He died at Newark-upon-Trent, of poison, as some chroniclers report, and his corpse was conveyed across the country, to Worcester, where he had ordered, in his will, that it should be interred. The tomb, near the east end of the choir, with the effigy of King John on its slab, is of a date long subsequent to his decease. It was probably made at the time when Prince Arthur's chantry-chapel and tomb were erected."

Externally this cathedral does not exhibit much of architectural interest or beauty, which is rightly accounted for by the barbarous use made of a common stone called red sand-stone, of a staring brick-dust colour, which is soft and porous, and with which the Goths, who are charged with the management of these matters, have, for the sake of its cheapness, always used in preference to the Portland or other building stone. With the same barbarous taste, common white or yellow wash has often been used to renovate its interior walls.

The engravings in this volume convey such full and complete information relating to the forms, sizes, relative proportions of parts, and the varied architectural members of this cathedral, that it must be unnecessary to describe geometrical plans, sections, and elevations —we, therefore, refer our readers to the book itself, wherein these matters, with all others connected with this edifice, will be found circumstantially detailed even to the most minute point.

On its list of prelates, the see of Worcester has certainly enrolled many names of high historic celebrity. It presents one pope, four saints in the Catholic calendar, six lords chancellor of England, three lords treasures, one king's chancellor, eleven archbishops of Canterbury and of York, one Roman cardinal, and many men of general learning and of literary merit.

The marble monuments are numerous, and amongst them are the masterly works of Roubiliac, Chantrey, and the younger Bacon. In the great north transept stands Roubiliac's, to the memory of Bishop Hough; in the lesser north transept, called the Bishop's Chapel, is Chantrey's commemoration of Charlotte Elizabeth, wife of the Rev.

William Digby ; and in the south side of the nave are two by the younger Bacon,—one, to the memory of Richard Solly, Esq., and the other to the gallant Col. Sir Henry Walton Ellis, K. C. B., who was killed at the battle of Waterloo.

A chronological list of the bishops of Worcester, commencing at the Mercian dynasty, in the year 680, to the present time, and of the deans, commencing in 1541, with short biographical memoranda of the latter, are additions which enhance the merits of this work :—and to sum up all, (by no means an usual occurrence with authors) Mr. Britton has given a list of the published authorities from which he has principally drawn such materials as were not communicated to him orally or by writing, or which he did not derive from his personal examination.

In conclusion, we are perfectly aware that we have not done such strict justice to Mr. Britton's most excellent work on the Antiquities of the Worcester Cathedral as the subject required, or as we unquestionably should have done, had space permitted us—but, already deeply in arrear in that department appropriated to critical notices of new publications, and finding that our observations have gone far beyond our calculation, we are necessarily obliged to omit many extracts and comments which we had written, and which would, undoubtedly, have rendered this review more perfect. Placed in such position, we are compelled to make a brief conclusion, which we do, by declaring this work of Mr. Britton's to be highly useful and valuable to every gentleman of the county, to every clergyman in particular, and, in fine, we should imagine that it will soon be found amongst the useful books of reference of every description of reader who takes an interest in the history and antiquities of his county.

Observations on certain curious indentations in the old red Sandstone of Worcestershire and Herefordshire, considered as the tracks of Antediluvian Animals ; and the objections made to such an hypothesis refuted. By Jabez Allies, Esq., one of the Council of the Worcestershire Natural History Society. Also, *An Addendum on a few other facts in Geology, Meteorology, Astronomy, Natural History, Topography, &c.* London: Edwards, pp. 132.

We have before referred to this curious subject in "*The Analyst*," when reviewing Dr. Booker's "*Vaga*," and the drama of an anonymous writer, entitled "*Katharine Audley*;" it would, therefore, be unfair were we to omit noticing the work of Mr. Allies, who professes to clear up the mysterious cloud that surrounds the celebrated "*Tracks of St. Catherine's Mare and Colt*," after the most approved scientific recipe. We must remind the reader that in several brooks whose waters gurgle among the sandstone slabs of the western borders of Worcestershire, "certain curious indentations" occur, many of which present a general resemblance to the mark of a horse's hoof.

These are said, by the rustics of the vicinity, to point out the course taken by a mare and colt, anciently stolen from St. Catherine.—Having formerly stated the legend at length, we shall now confine ourselves to Mr. Allies's "hypothesis." We cannot deny to that gentleman the praise of considerable ingenuity, much enthusiasm, and a regular determination to level every adversary that opposes him in the depths of Sapey brook. We think it best, therefore, at once, fairly to admit with him that these *are* tracks of antediluvian animals, provided we find that this admission involves us in the belief of nothing incredible. This we shall first inquire.—Mr. Allies then states the "tracks" to be those of shod, or domesticated horses, "the prints of the nails and the cockers of the shoes" having been visible to some observers; and much stress is also laid by the author on the "patten-ring impressions" made in the sand-stone, by the antediluvian ladies, upon whom our author seems to press rather too hard. Of course all this involves us in the supposition of some antediluvian nation being settled about Sapey brook; and Mr. Allies conceives that "Tubal-Cain himself, or some of his family, might have settled in this country and practised, or taught the art [of working in brass and iron] to the natives." But, unfortunately, this simple question arises—If Tubal-Cain, who was only the eighth from Adam, emigrated into Britain to teach "the natives," who were these "natives" that he came to teach; and from whence did *they* spring? Is it possible that they could be a remnant of the "*prior race of men and horses*" that existed "before the creation of Adam, and whom Mr. Allies, after calling them into being, rather gratuitously supposes "had become extinct by an universal deluge, or some other cause?" As the author provides us with abundance of "iron" and "patten-rings" to digest, he has here charitably granted us an extra "universal deluge" *before* the creation of Adam, to wash them down! This is certainly making the iron enter *too deep* into our souls; and notwithstanding the assistance afforded by Job, Dr. Adam Clarke, and others whom Mr. Allies calls to his aid, we feel a difficulty in acknowledging these "tracks" to be those of Tubal-Cain's horses! If we deny this, the learned author then insists that we must take our choice of one of these hypotheses—either that "*some of the strata of old red sand-stone was deposited since the existence of men and horses, and that the tracks in question were made by persons and animals, while the stratum was in a state of formation; and, therefore, that the geologists must begin de novo in their classifications;*"—for this the author strenuously contends;—or, that we must believe "that the tracks in question were made by a race of men and horses which became extinct before Eden was planted!" It is a maxim in philosophy to be satisfied with that theory which requires the simplest and most natural means to effect the object in view; and this being the case, it appears to us that the old story of St. Catherine offers the easiest solution of this problem, after all, notwithstanding the laborious efforts Mr. Allies has made to sustain his "hypothesis." If we only believe in the *power* of the

saint, we can have no difficulty as to the miraculous tracks made by her mare and colt ! But to suppose Tubal-Cain taught the natives, or, that the antediluvian females “ used a kind of patten or sandal *shod with an iron ring* ” to “ defend their feet from the gigantic vegetation of those days ; ”—to say nothing of the “ prior race of men and horses ” existing before Adam, &c. is in fact to compose a geological romance, which, however amusing, is in reality no more credible than the often cited *fact* of the Ledbury bells *ringing without hands* in honour of St Catherine !

Mr. Allies must excuse these free remarks ; he is, in fact, a gentleman of research and observation, but, like a true neophyte, he sets no bounds to his imagination. Still, we heartily thank him for his really curious work. He has rendered a *dry* subject a very *wet* one—wet with our tears ! though not those resulting from grief. If he will only refrain from meddling with “ the antediluvian solar year,” and let Methuselah, Enoch, and Noah, sleep in peace ; if he will be kind enough not to “ *submit* that the deluge commenced when the oak and other forest trees were not in leaf ; ” if, indeed, he will mercifully spare us from “ deluges,” bones of “ cows and bulls,” and let the “ *sappy fluid in the wood* ” remain there in quiet ; if he will but leave Dr. Adam Clarke and the Fabians to fight their own battles, and confine himself to the bounds of actual observation, we are sure he could write a volume of interest and value. But here the very titles of the articles in his “ Appendix ” would fill one of our pages, and he goes out of his way to descant upon “ the most ancient of the pyramids being probably antediluvian,” and tells us that “ Ab d’Allatif *says* that he saw a prodigious number of hieroglyphical inscriptions on the two great pyramids, as many as if copied would fill perhaps *ten thousand* volumes ! ” It is these off hand assertions and imaginative hypotheses that confuse Mr. Allies’s labours ; and as gold or silver becomes undistinguishable when mixed with *too much* alloy, so the really sensible observations of the learned author before us are injured from the mass of dubious not to say fabulous matters that he has unadvisedly introduced.

Wanderings through North Wales. By Thomas Roscoe, Esq. Embellished with highly-finished Engravings, by Wm. Radclyffe, from drawings made expressly for the work, by Cattermole, Cox, and Creswick. Parts 4, 5, and 6. London : Charles Tilt, and Simpkin and Marshall ; and Wrightson and Webb, Birmingham.

We have often visited and admired with a poet’s and a painter’s eye, the romantic and beautiful scenes which are in this work so enchantingly described by the graver of Radclyffe and the pen of Roscoe, and can speak, therefore, more decidedly on the point of truth of resemblance than the stranger who collects his information from oral or published description. Travellers talk with wonderful facility of the verdant plains of Italy, and the stupendous mountain

scenery of Switzerland, of the Pyrenees and the Alps, and countries far removed, who never think of exploring the principality, within a few miles only of their reach. We have certainly had intelligent writers on the landscape beauties of Wales, but how very few in comparison with those of foreign countries. Yet we undertake to inform our travelled countrymen that Wales possesses as many natural beauties in upland and in lowland scenery even as the classic regions of Italy. It wants, truly, its delicious climate, for North Wales, in Winter, we must allow, is not very *particularly* favourable to thin-skinned frequenters of the south, and that the air is occasionally, in that season, a little sharp—but if a traveller be in health, and can *walk* sufficiently to keep his blood in circulation, and has a real, a decided, not an affected taste for the beauties of nature in the lofty and the grand, he will search the world in vain for a more romantic and rapture-kindling country than Wales. Although not Welchmen, we are extremely fond of the country, of its mutton, its poultry, its fish, its butter, and of its sincere and warm-hearted natives—and we thank Mr. Roscoe, Mr. Radclyffe, and Messrs. Cattermole, Cox, and Creswick, for pourtraying with such infinite taste and judgment so many of the landscape beauties with which our favourite country abounds.

Of the preceeding numbers we have before spoken very highly, and we are now of opinion that the work maintains its ground with a steadiness which must bring it into extensive circulation. A more beautifully illustrated work, at treble its cost, we never beheld, and great praise is due to all the parties concerned in its execution.

Souvenirs pendant un Voyage en Orient, par A. De Lamartine. Vols III. and IV. London: E. Churton, Holles Street; and J. B. Bailliere, Regent Street, 1835.

Amongst the cheap and neatly printed portable volumes which are now become so much in request, is a publication of the Standard French Works, that is of French works which time and general approbation have made valuable. De Lamartine is an excellent specimen of the most select and meritorious standard works from France, at a rate even cheaper than that at which they are produced abroad, and with the important advantages of neat and correct typography, and an external form more adapted to the prevailing taste. The price, which is no unimportant consideration, is one-third less than the foreign editions, as by the useful aid of compression, two volumes are squeezed into one, by which attention to economy the preference given on the score of cheapness will no longer sustain its ground.

On looking through this double volume of De Lamartine we find it distinguished by remarkable correctness as well as by extreme typographical neatness. The maps, too, on which the adventurous course is traced, are very clearly delineated. We cannot doubt of the success of the publisher in this undertaking.

The Works of William Cowper. Edited by the Rev. T. S. Grimshawe, A. M. *With an Essay on the Genius and Poetry of Cowper.* By the Rev. J. W. Cunningham, A. M. Vols. 6, 7, and 8. London: Saunders and Otley, Conduit Street. 1835.

This work is now drawing to its conclusion; but if it were possible to extend it to half-a-dozen more volumes, few of its readers, we think, would evince the slightest objection. It is, without exception, the most correct and valuable edition that has hitherto appeared of the unmutilated works of this deservedly favourite poet. It is not the beauty of the type and its embellishments of plates and title-pages, highly lustrous and perfect as they are, but the additional letters of the Olney bard, upwards of two hundred in number, never before given to the world, rendering complete the whole of his private correspondence, with Mr. Cunningham's essay on his genius and poetry, and the Editor's careful revision and arrangement, as well as notes and comments, which form the chief points of attraction in these delightful volumes.

It will not be necessary to enter into the minute particulars of this most comprehensive work—it will be enough for every admirer of Cowper to know that what has hitherto been wanted to unravel the clue of conjecture, is now amply supplied, and that nothing more can now be granted or desired, to render the actions, writings, and even thoughts of Cowper familiar to his readers.

History of British Fishes. By W. Yarrell, F. L. S., &c., &c. London: John Van Voorst.

The time has not long past when the study of Natural History was looked upon by many with contempt. The false impressions which induced the ignorant to regard its advocates as maniacs, are now happily removed. The popular style in which Natural History has been treated by scientific men, has, in a great measure, effected this desirable change. Valuable works have appeared on the Mammalia, on Birds, and Insects, of this country, but a work on the Fishes has long been wanting, those existing not only being defective, but too expensive to come within the reach of the generality of readers. This deficiency, fortunately, is now in a fair way of being supplied by one who is in every way well qualified; and we rejoice to find that Mr. Yarrell has chosen so happy a mode of giving to the world the results of his well-known long and arduous researches.

In the prospectus of this work, an introduction, and a systematic table of the orders, families, and genera are promised. As this publication is not only suited to the naturalist, but likewise to the general reader, we hope Mr. Yarrell will make his book better adapted to the latter by giving, in his introduction, a more detailed definition of the *families* and *orders* of fishes, as they are but

slightly noticed in the body of the work—for instance, in the number now before us, we are told that the Cyprinidæ is “the family of the carp,”* but nothing is said about their internal organization (*as a tribe*), their semi-carnivorous habits, the structure of the mouth, and various other external peculiarities. To those who are already acquainted with the subject this may be of but little importance; the general reader will, however, naturally wish for further information.

Burmeister's Manual on Entomology, from the German of Dr. Hermann Burmeister. By W. E. Shuckard, M. E. S. London: E. Churton.

To those who are fond of this delightful study, the above Manual must form a most valuable acquisition. This work, which was originally written in German, is of modern date, and the author has incorporated in it all the most essential facts derived from the labours of Straus, Durckheim, Müller, and various other eminent men. The English translation, by Mr. Shuckard, now in the course of publication, is free, and the style elegant. We strongly recommend the manual, not only to the entomologist, but to the naturalist, as an excellent work of reference. We would also advise the engraver to use his burin more firmly, in the forthcoming plates, some of the later engravings being very indistinct from the extreme faintness of the lines.

[We had written an article on an highly interesting paper by Langston Parker, Esq. of Birmingham, and published in the Dublin Medical Journal for September, “On the nature and treatment of Diseases of the Stomach, chiefly regarding derangements of its sensibility,” (to be followed by a series of papers on similar diseases), but which we regret our inability to insert for want of space, although we have enlarged our publication to sixteen pages more than was originally intended. We are placed in the same unfortunate position with respect to several notices of new publications:—including Britton's “History and Description of the late Houses of Parliament,” Loudon's “Arboretum Britannicum,” and “the Florist's Magazine,” a work in the course of publication, by Orr and Smith, and deserving of high commendation, from the beauty of the plates, and the comprehensive and explanatory style of the letter-press.]

* This slight way of noticing the families, &c. will also apply to most of the others contained in the former numbers of the work, the want of some information on which would deteriorate its value as a book of reference.

LITERARY INTELLIGENCE.

The Rev. Edward Stanley, M.A., is preparing a work on Land Birds and Sea Birds; their Structure, Habits, and Peculiarities, interspersed with a variety of illustrative Anecdotes, and numerous Engravings.

A popular work on Minerals and Metals; their Nature, Properties, and Uses; with some Account of Mines and Mining; illustrated by numerous Wood-cuts, is in the press. Also, uniform with the same, a work on Clocks and other Time-keepers; with some account of the Applications of Clock-work in Science and the Arts; illustrated by Engravings.

The Oriental Annual for 1836, by Rev. H. Caunter, B. D., is expected

to exceed either of its predecessors in the variety and beauty of the Illustrations from the pencil of William Daniell, Esq., R. A.

In October next will be published, in 8vo., "Clinical Medicine and General Pathology," grounded on the most approved and recent views of the Continental Pathologists. Intended for Students in the third and fourth year of their Medical Studies. By Dr. Stewart Thorburn, of Liverpool.

A monthly periodical, entitled "The Ornithological Repository," will shortly appear. It will be published at Derby, and be devoted chiefly to the elucidation of every thing relating to the feathered tribes.

NEW PUBLICATIONS,

From June 8 to September 8.

Annual Register, for 1834, 8vo. 16s.
Autobiography of an Irish Traveller,
3 vol. post 8vo. 31s. 6d.

Beattie's Views in Switzerland, vol.
2, 4to. 20s.

Beckford's (Wm.) Excursion to the
Monasteries of Alcobaca, &c., 8vo.
10s. 6d.

Booth's Analytical Dictionary of the
English Language, 4to. £2. 5s.

Bowring's Second Report of the
Commerce between France and
G. Britain, fol. 12s.

Bridgewater Treatise, No. 7. (Kir-
by's History, &c., of Animals,) 2
vol. 8vo. 30s.

British Constitution; its Origin and
History, 12mo. 2s. 6d.

Britton's History, &c., of Worcester
Cathedral, med. 4to. 17. 18s.—imp.
4to. 3l. 3s.

Bugni's Italian Manual for Self-
tuition, post 8vo. 10s. 6d.

Burgess's (Rev. R.) Tour in Greece
and the Levant, 2 vol. fcap. 14s.

Byrne's Treatise on Spherical Tri-
gonometry, 8vo. 4s. 6d.

Career of Don Carlos since the Death
of Ferdinand VII., 8vo. 14s.

Caveler's (W.) Specimens of Gothic
Architecture, Pt. 1, 21s.

Chronological Tables of Ancient
History, folio, 9s.

Clark's (Dr. Jas.) Treatise on Con-
sumption and Scrofula, 8vo. 12s.

—— (J. P.) Practical Treatise on
Teething, 8vo. 3s.

Cobbett's (Wm.) Life, 12mo. 7s.

Cortes, or the Fall of Mexico, by
Dr. Bird, 3 vol. post 8vo. 27s.

Dante's Canzoniere, and other Po-
ems; transl. by Lyell, sm. 8vo.
12s.

Davies' (Thos.) Lectures on Diseases
of the Chest, 8vo. 12s.

De la Beche's How to Observe.
Geology, post 8vo. 10s. 6d.

Doctor (The) &c., vol. 3., post 8vo.
10s. 6d.

Family Library, vol. 52, (Defoe's
Journal of the Plague, 1665.)
18mo. 5s.

——, vol. 53, (Washing-
ton's Life, &c., vol. I.,) 18mo. 5s.

Forbes's (Dr. John) Medical Bib-
liography, roy. 8vo. 15s.

Goethe's Faust, &c., transl. by Dr.
Anster, sm. 8vo. 14s.

Grant's Outlines of Anatomy, part
2, 8vo. 5s.

Gresley's (W.) Treatise on the Art
of Preaching, 8vo. 12s.

- Griffith's (Wm.) Treatise on Water in the Brain, 12mo. 3s. 6d.
- Hutchinson's (Graham) on Meteorological Phenomena, 8vo. 16s.
- Ingram's Memorials of Oxford, vol. 2, 8vo. 18s.; 4to. 35s.
- Jamaica as it was, as it is, and as it may be, &c., 12mo. 5s.
- Jardine's Naturalist's Library, vol. 9.—Pigeons, vol. I, 12mo. 6s.
- Jesse's Gleanings in Natural History, vol. 3, post 8vo. 10s. 6d.
- Johnstone's Treatise on Draining, Embanking, &c., 4to. 21s.
- Kean's (Edm.) Life, by Barry Cornwall, 2 vol. post 8vo. 21s.
- Kennedy's (J. P.) Ireland Tranquillized without Soldiers, 8vo. 7s.
- Kincaid's Random Shots, from a Rifleman, post 8vo. 10s. 6d.
- Knowles' English Pronouncing Dictionary, roy. 8vo. 24s. 6d.—4to. 2l. 9s.
- Lamb's (Chas.) Specimens of English Dramatic Poets, 2 vol. sm. 8vo. 14s.
-
- Rosamond Gray; Recollections of Christ's Hospital, &c., post 8vo. 9s.
-
- Prose Works, 3 vol. post 8vo. 27s. 6d.
- Lardner's Cyclopædia, vol. 68, (Thirlwall's Greece, vol. I.) 12mo. 6s.
-
- _____, vol. 69, (History of England, vol. V.) 12mo. 6s.
-
- _____, vol. 70, (Arts, &c., of the Greeks and Romans, vol. II.) 6s.
- Lewis (G. C.) on the Origin, &c., of the Romance Languages, 8vo. 12s.
- Liber Ecclesiasticus; or, Revenues of the Established Church, 8vo. 16s.
- Life of Wm. Cobbett, fcap. 5s.
- Macgregor's (John) Resources and Statistics of Nations, vol. 1, 8vo. 25s.
- Mackintosh's View of the Reign of James II, 4to. 31s. 6d.
- Memoirs of the Astronomical Society, vol. 8, 4to. 20s.
- Natural History of Man, 18mo. 3s. 6d. hf.-bd.
- Oke's Observations on Surgery, part 2, 8vo. 6s.
- Ostler's (Edw.) Life of Viscount Exmouth, 8vo. 14s.
- Phelan (D.) on the Medical Charities of Ireland, 8vo. 9s.
- Philip (A. P. W.) on Affections of the Brain, 12mo. 4s.
- Phillip's (John) on the Geology of Yorkshire, part 1, 4to. 31s. 6d.
- Philosophical Transactions for 1835, part 1, 4to. 22s.
- Popular Illustrations of Natural History, 12mo. 6s. 6d.
- Proceedings of the British Association, 1834, 8vo. 15s.
- Quin's (M. J.) Steam Voyage down the Danube, 2 vol. post 8vo. 21s.
- Raffles' (Sir T. S.) Life, &c., by his Widow, 2 vol. 8vo. 24s.
- Rayer on the Diseases of the Skin, 8vo. 28s.—Atlas to ditto, 4to. 3l. 10s.
- Reynolds' Voyage of the U. S. Frigate, Potomac, 8vo. 21s.
- Richardson's English Dictionary, vol. 1, part 1, 4to. 26s. 6d.
- Richson's (Cha.) Mental Arithmetic and Calculator, 12mo. 4s. 6d.
- Robert's (Emma) Scenes and Characteristics of Hindostan, &c., 3 vol. sm. 8vo. 27s.
- Robertson's (W. H.) Treatise on Diet and Regimen, 12mo. 6s.
- Sherwood's (Mrs.) Caroline Mor-daunt, or the Governess, 12mo. 4s. 6d.
- Smith's (Alex.) Philosophy of Morals, 2 vol. 8vo. 21s.
- St. John's (J. A.) Tales of the Ramad' Han, 3 vol. post 8vo. 31s. 6d.
- Stewart's (R. B.) Outlines of Botany, post 8vo. 2s. 3d.
- Swain's (Cha.) Memoir of Henry Liverseege, folio, 5s.
- Tables of the Population, &c., of the British Colonies, folio, 12s.
- Tales of the Peerage and the Peasantry, 3 vol. sm. 8vo. 1l. 11s. 6d.
- Thompson's (W.) Journeys through Italy and Switzerland, post 8vo. 10s. 6d.
- Transactions of Camb. Philosoph. Society, vol. 5, part 3, 4to. 12s.
-
- _____, Geological Society, London, vol. 3, part 3, 4to. 14s.
- Travers' (B.) Constitutional Irritation, vol. 2, 8vo. 14s.
- Underwood's Guide to Translation of Latin Prescriptions, 18mo. 5s. 6d.
- Ure's Philosophy of Manufactures, cr. 8vo. 10s.

METEOROLOGICAL REPORT.

REMARKS.—The variations of temperature during the month of June were great and remarkable.—A sudden *increase* took place on the morning of the 6th, when the thermometer exceeded the maximum of the preceeding day 14° ; but the *decrease* which succeeded at the latter end of the month was still more sensibly felt. On the 25th and 26th of the month the maximum was as much as 30° below that of the 11th, and it is curious to remark that, only a few days after a temperature of 82.5 at midsummer, the thermometer should, at the middle of the day, stand no higher than it did at mid-winter, for on the 7th of December the maximum was 2° higher than on the 26th of June.

On the 4th of August, hardly a cloud to be any where discerned—the air calm and hot—about four or half-past, p. m., a loud clap, apparently of thunder, burst over us, quite near, with a continued rumbling as if the sound reverberated among clouds. We were out of doors at the time and the noise seemed to come from somewhere over-head. It was heard by almost every one in this neighbourhood—and those in doors at the time were sensible of considerable motion—shutters and windows rattling, &c. There have been various reports of slight shocks of earthquake; we can only state the fact above-mentioned; it surprised us much at the time, and we are yet unable to account for it.

There have been no thunder storms at Malvern during the preceding months: heavy storms and distant thunder with occasional lightening—but nothing like a thunder storm.

Malvern, Sept. 20th, 1835.

JUNE.

1835	Barometer.		Thermometer		Remarks.		
June.	Morn.	Even.	Max	Min.	Day.	Night.	Wind.
1	29.200	29.350	55	45	Clouds, heavy showers	Rain	Calm
2	29.405	29.345	62	46	Clouds, sun, showers	Showers	Southerly
3	29.300	29.380	66.5	50	Fine, clouds, sun	Fine	Southerly
4	29.445	29.515	65.5	49	Hazy, fine, sun	Fine	Northerly
5		29.545	62	51	Hazy, fine, sun	Fine	Northerly
6	29.510	29.530	73.5	51	Hazy, fine, thunder	Fine	Northerly
7	29.570	29.540	75	55	Fine	Fine	Ditto, light
8	29.540	29.555	79	63	Fine, few drops of rain	Fine	South, light
9	29.610	29.682	79	61	Fine, sun, lightg., thun.	Fine	Ditto
10	29.705	29.756	80.5	60.5	Fine, sun	Fine	Vble. light
11	29.795	29.800	82.5	62.5	Fine, sun	Fine	S. E. & N.
12	29.810	29.750	76.5	54	Hazy, sun, clouds	Fine	Northerly
13	29.730	29.670	66	58.5	Hazy, sun, clouds	Fine, cloudy	N. E.
14	29.645	29.615	74	53	Hazy, fine, sun	Fine	Easterly
15	29.640	29.660	71	56	Fine, sun	Fine	North, fresh
16	29.675	29.570	77.5	55	Fine, cloudy	Fine	S. & N. W.
17	29.538	29.515	72	58	Fine, cloudy	Fine	N. W.
18	29.515	29.530	62.5	52	Fine, clouds, sun	Fine	North, fresh
19	29.580	29.475	66	49	Fine, clouds, sun	Fine	Northerly
20	29.365	29.455	62	53	Fine, heavy clouds	Fine, cloudy	West, high
21	29.416	29.270	68	48	Fine, dark clouds	Fine	Ditto, ditto
22	29.135	29.000	67	55	Fine, hvy. rain in evng.	Fine	Ditto, ditto
23	29.015	29.095	62	46	Fine, clouds, sun	Showers	S. E. & W.
24	28.725	28.760	55	46.5	Showers, heavy rain	Some rain	N. W. high
25	28.900	29.230	54	42	Rain	Fine	S. & N. E.
26	29.200	29.205	53	42	All rain	Fine	North, light
27	29.410	29.620	56	41	Fine, sun, clouds	Cloudy	Ditto
28	29.620	29.612	63	41.5	Fine, sun, clouds	Fine	N. W.
29	29.615	29.518		43.5	Fine, sun	Fine	Southerly
30	29.480	29.468	65	49.5	Fine, sun, clouds	Fine	Ditto fresh
Mean Max. 67.3.			51.5 Mean Min.				

JULY.

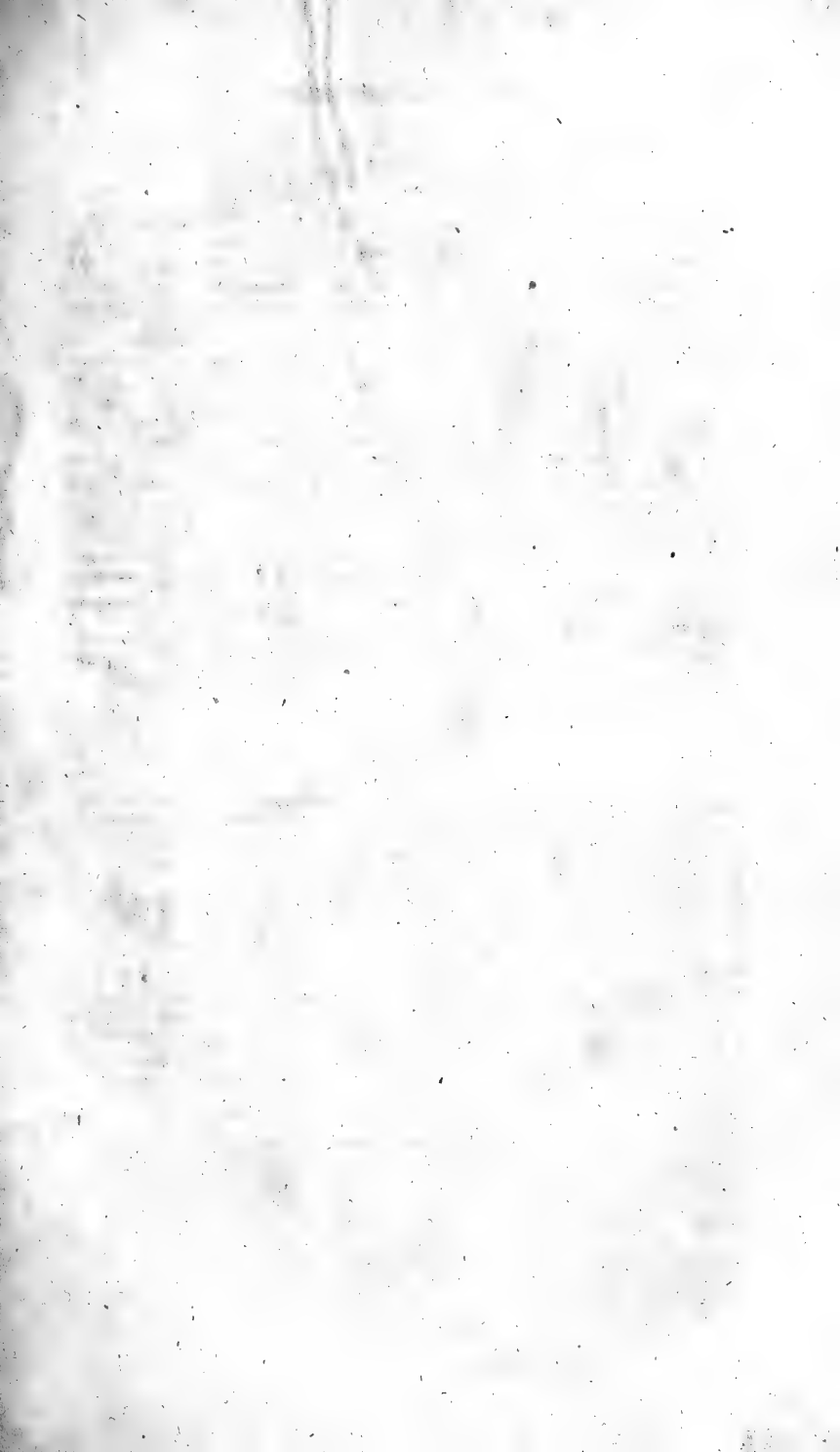
1835	Barometer.		Thermometer.		Day.	Remarks.		Wind.
July.	Morn.	Even.	Max.	Min.		Night.		
1	29.445	29.410	70.5	52	Fine, sun, clouds	Fine	S. E.	
2	29.410	29.440	67	52	Clouds, sun, fine	Some rain	Calm	
3	29.470	29.470	70	52	Very fine, sun, clouds	Fine	Westerly	
4	29.430	29.313	69.5	54	Very fine, sun, clouds	Ditto	S. W.	
5	29.200	29.206	64	55	Heavy showers, sun	Some rain	Southerly	
6	29.05	29.545	67	50	Clouds, sun, fine	Showers	Westerly	
7	29.505	29.390	67	49	Clouds, sun, fine	Fine	Southerly	
8	29.330	29.410	63.5	52	Cloudy, fine	Showery	S. W.	
9	29.300	29.026	63	53	Cloudy, rain at even.	Cloudy, fine	South	
10	29.200	29.318	62	50	Cloudy, fine	Heavy showers	N. W. fresh	
11	29.430	29.405	63.5	48.5	Fine, sun, and clouds	Fine	S. E. and W	
12	29.310	29.138	63	53	Cloudy, fine, rain at ev.	Showers	S. W. fresh	
13	29.200	29.380	61	52	Showers, fine	Light Showers	W. & W.	
14	29.406	29.350	65	50.5	Fine, sun, and clouds	Fine	Westerly	
15	29.350	29.100	65	53	Cloudy, fine, rain	Ditto	S. W.	
16	29.210	29.352	65	50	Fine, clouds, sun	Light showers	Ditto	
17	29.320	29.360	70	52	Ditto ditto ditto	Fine	Southerly	
18	29.310	29.410	67	57	Ditto ditto, lt. showers	Showers	Ditto	
19	29.510	29.500	67	50	Fine, sun	Fine	N. W.	
20	29.535	29.590	72.5	55	Clouds, fine, sun	Cloudy	S. W. calm	
21	29.615	29.623	73.5	59	Clouds, fine, sun	Fine	S. Easterly	
22	29.630	29.630	72	57	Fine, sun	Ditto	N. Easterly	
23	29.630		70	54	Showery, fine	Ditto	N. Westerly	
24	29.600	29.555	70.5	53	Fine, clouds, showers	Ditto	N. Easterly	
25	29.585	29.575	75	56	Fine, sun	Ditto	Ditto	
26	29.560	29.530	75	55	Ditto, ditto	Ditto	S. Easterly	
27	29.495	29.420	76	54	Ditto, ditto	Ditto	Ditto	
28	29.470	29.585	76	60	Sun, hazy, fine	Ditto	Northerly	
29	29.610	29.605	72.5	55	Mist early, cloudless	Ditto	Ditto	
30	29.593	29.505	75.5	57	Not a cloud	Ditto	Calm, N. W.	
31	29.520	29.515	67.5	57	Not a cloud	Ditto	Northerly	
Mean Max. 68.6			53.4 Mean. Min.					

AUGUST.

1835 Aug.	Barometer.		Thermometer		Remarks.		
	Morn.	Even.	Max.	Min.	Day.	Night.	Wind.
1	29.505	29.400	72	52	Hazy, fine, sun	Fine	Calm, S. W.
2	29.360	29.400	71	61	Fine, light clouds	Ditto	Easterly
3	29.430	29.435	67	53	Fine, clouds, sun	Ditto	Ditto
4	29.425	29.405	70.5	50	Fine, rain in evening	Ditto	S. W.
5	29.372	29.340		57	Fine, light clouds, sun	Ditto	Ditto
6	29.305	29.395	70	55	Fine, chiefly cloudy	Ditto	West, high
7	29.340	29.520	69	62	Cloudy, showers	Ditto	N. variable
8	29.630	29.705	66	47	Fine, sun	Ditto	Ditto ditto
9	29.730	29.700	71	50	Ditto ditto	Ditto	Light, vble.
10	29.675	29.560	76	61	Ditto ditto	Ditto	S. fresh
11	29.435	29.900	79.5	64	Ditto ditto	Ditto	Ditto
12	29.320	29.530	73	59	Ditto ditto, clouds	Ditto	W. N. W.
13	29.490	29.565	70		Fine	Ditto	S. E.
14	29.605	29.595	70		Hazy, sun, clouds	Ditto	Northerly
15	29.560	29.535	72	55	Fine, sun, clouds	Ditto	Ditto
16	29.555	29.670	70	60	Ditto ditto ditto	Ditto	N. W., light
17	29.640	29.670	77	62	Ditto ditto ditto	Cloudy, fine	Northerly
18	29.662	29.608	75	59	Fine, sun	Ditto	S. E.
19	29.600	29.465	75	56	Ditto ditto	Fine, clear	Ditto
20	29.303	29.080	76.5	58	Ditto ditto, shr. thun.	Fine	Easterly
21	29.000	29.860		59	Ditto ditto, shr lgtn.	Ditto	S. E.
22	29.690	29.000	70	58	Ditto ditto, shrs., thun.	Showery	Southerly
23	29.025	29.005	68	53	Ditto ditto, shrs.	Ditto	S. W.
24	29.900	29.905	63	58	Heavy rain	Rain	Southerly
25	29.982	29.040	64.5	55	Cloudy, light rain	Cloudy	Northerly
26		29.025	64		Cloudy, fine		N. W.
27	29.084	29.304	67	51	Fine, sun	Fine	Southerly
28	29.403	29.475	66.5	53	Ditto ditto, clouds	Ditto	East
29	29.425	29.405	66	51	Ditto ditto ditto	Ditto	Ditto
30	29.410	29.410	66	51.5	Fine, all sun	Ditto	Ditto
31	2440	29.460	63.5	51	Fine, sun, clouds	Ditto	Easterly
Mean Max. 68.6.			53.4 Mean Min.				

25 NOV. 1916





CONTENTS.

	PAGE.
Remarks upon Bishop Burnett's History of his own Time	1
Remarks conducive to the Improvement of Ornithological Nomenclature	26
The Sinner's Agony	35
Remarks on the practicability of Navigating the River Huallaga, with Notes of the Productions, and of part of Maynas, Peru, by A. Mathews, A. L. S.	36
Aphorisms on the Frontal Sinuses, and the extent of their interference with Phrenological Observation.....	43
On the Study of Latin, more especially as regards the Medical Profession.....	46
Sonnet	53
A comparison between the Climates of Great Malvern and London ...	54
On the Non-Permeability of Glass by Water	72
Sonnet	77
A Retrospect of the Literature of British Ornithology, from the close of the 17th Century to the present time.....	78
Birmingham Society of Arts—Modern Exhibition.....	130
Meeting of the British Association	113
Professor Agassiz on Ichthyolites, with a Lithographic Engraving of a new species of the genus Tetragonolepis.....	132
Hints to observers of Halley's Comet, by the Rev. T. W. Webb.....	134
Proceedings of Provincial Societies.....	138
Meeting of the Provincial Medical and Surgical Association at Oxford—Birmingham School of Medicine Anniversary Meeting—Birmingham Philosophical Institution; depositions relative to the Toad found in the stratum of new red Sand-stone, near Coventry—Birmingham Mechanic's Institution—Liverpool Literary, Scientific, and Commercial Institution—Manchester Mechanic's Institution—The new Mechanics's Institution, Manchester—Worcestershire Natural History Society—Shropshire and North Wales Natural History Society.	
Critical Notices of New Publications	159
The life of Samuel Johnson, L. L. D., by J. Boswell.—Loudon's Gardener's Magazine—The History and Antiquities of the Cathedral Church of Worcester, by J. Britton, F. S. A.—Observations on certain Indentations in the old red Sand-stone, by J. Allies, Esq.,—Wanderings through North Wales.—De Lamartine's Souvenirs pendant un Voyage en Orient—The Works of Wm. Cowper, edited by the Rev. T. S. Grimshaw—Yarrell's History of British Fishes—Burmeister's Manual of Entomology.	
List of New Publications	173
Literary Intelligence	173
Meteorological Report	175

TO CORRESPONDENTS.

As one of the principal objects of *The Analyst* is to give correct reports of the proceedings of Literary and Scientific Institutions, and Societies established for the advancement of a more perfect knowledge of Natural History, the Editor hopes to be furnished, by the Secretaries of these several Institutions, with the requisite materials for giving a full report of the Transactions of the Session about to commence, in time for the next publication (January 1st.)

J. H. has our best thanks for his communication, but we have not space to insert his animadversions on the scurrilous attacks on the recent meeting of the British Association at Dublin. Our correspondent will find an able refutation of the gross calumnies fabricated by a certain portion of the periodical press, in the 22d number of the *Lancet* for August, 1835.

W. must excuse our inserting his critique on the British Cyclopædia, division III, Natural History—not having seen a copy of the work, we cannot, of course, judge of its merits.

It is requested that all communications sent to the Editor, may be **POST-PAID**; and Contributions should be sent *early* in the quarter *preceding* that which they are expected to appear.

The 14th number of "**THE ANALYST**" will appear on the 1st of January next.

ERRATUM.—Page 133, line 30, insert, after Professor Agassiz, "has been derived."

*British Birds
systematically arranged*

THE ANALYST;

QUARTERLY JOURNAL,

OF
SCIENCE, LITERATURE,

NATURAL HISTORY, AND THE FINE ARTS.

No. XIV.



JANUARY, 1836.

London:

SIMPKIN, MARSHALL, AND CO.,

STATIONERS' HALL COURT;

W. CURRY, JUN., & CO., DUBLIN;

BARLOW, KNOTT, WRIGHTSON AND WEBB, LANGELEDGE, DRAKE, BIRMINGHAM; GRAPEL, LIVERPOOL; BANCES AND CO., MANCHESTER; WHEELER, DEIGHTON, STRATFORD, RIDGE, HUNT, WOODFORD, EATON, WORCESTER; JEW AND BRYANT, GLOUCESTER; WILLIAMS, H. DAVIS, BETTISON, CHELTENHAM; EDDOWES, SHREWSBURY; SHARPE, WARWICK; W. PARKE, WOLVERHAMPTON; AND ALL BOOKSELLERS IN TOWN AND COUNTRY.

PRICE FOUR SHILLINGS.

CONTENTS.

	PAGE.
On the Effects of certain Mental and Bodily States upon the Imagination, by Langston Parker, Esq.	177
The Birds of Britain, systematically arranged	197
On the Influence of Comets, by the Rev. T. W. Webb	218
Cursory Observations on certain inconsiderate Criticisms respecting Painting and Sculpture, by William Carey, Esq.	230
Chemistry	248
Remarks on the necessity of Improvement in Education	253
On the Importance of the Study of Botany to Medicine	259
Sketches of European Ornithology	265
Notitiæ Botanicæ	280
An Outline of British Caterpillars,—No. I.	283
Correspondence	288
Proceedings of Provincial Societies :	293
Shropshire and North Wales Natural History Society ; Birmingham School of Medicine and Surgery ; Birmingham Philosophical Institution—Mr. Taylor's Lectures on "The Early English Opera;" Birmingham Mechanics' Institution ; Liverpool Medical Society ; Liverpool Literary, Scientific, and Commercial Institution ; Worcester Literary and Scientific Institution—Lecture on the Nervous System of Man and Animals, by E. A. Turley, Esq.	
Critical Notices of New Publications :	317
Elements of Bedside Medicine and General Pathology, by J. Stewart Thorburn, Esq., M. D. ; The Air : The Earth : The Heavens : by R. Mudie ; Swainson on the Natural History and Classification of Quadrupeds ; The Phrenological Journal and Miscellany, No. 46 ; The Irish Farmer's and Gardener's Magazine. The Naturalist's Library,—Ornithology ; The Earth,—its physical condition and most remarkable Phenomena, by W. Mullinger Higgins ; Burmeister's Manual of Entomology ; A Practical Treatise on Diseases of the Teeth, by W. Robertson ; Middlemore's Treatise on Diseases of the Eye ; Yarrell's History of British Fishes ; Loudon's Gardener's Magazine,—Magazine of Natural History and Architecture, and Arboretum Britannicum ; Bent's London Catalogue of Books.	
Fine Arts:	337
Lewis's Sketches and Drawings of the Alhambra ; Roscoe's Wanderings through North Wales.	
Scientific Miscellanea	342
Literary Intelligence	344
List of New Publications	345
Observations on the Aurora Borealis	346
Meteorological Report	346

TO CORRESPONDENTS.

JAMES — has our best thanks for his Communications, but they are not exactly adapted for the pages of *The Analyst*. In compliance with his request, the Papers are left at the Publishers' in London, addressed as above.

It is requested that all communications sent to the Editor may be directed (POST PAID) to the care of **MR. BARLOW**, Bookseller, Bennett's Hill, Birmingham ; and contributions should be sent *early* in the quarter preceding that in which they are expected to appear.

The 16th number of *The Analyst* will appear on the 1st of April next.

ERRATA.—Page 200, line 10, for *Nictea cinerea*, (*Steph.*), read *Surnia cinerea*, (*Dum.*) Page 200, line 14, for *Tawny Surn*, *Surnia stridula*, (*Steph.*) read *Tawny Aluc*, *Aluco Stridua*, (*W.*) Page 202, line 23, for *Silvia hippolais*, (*Lath.*), read *Silvia loquax*, (*Herb.*)

❧ *The First and Second Volumes of The Analyst (with Index), in cloth boards, price 10s., and the Third Volume, price 9s., may be had of Simpkin, Marshall, & Co., London, and all other Booksellers.*

ON THE EFFECTS OF CERTAIN MENTAL AND BODILY STATES UPON THE IMAGINATION.*

BY LANGSTON PARKER, ESQ.

I.—THE GENERAL PHENOMENA OF THE IMAGINATION.

METAPHYSICS, Psychology, or the Science of Mind, has attracted, in an eminent degree, the attention of the master-spirits of all ages ; and, from Plato to Abercrombie, the most profound philosophers have been engaged in investigating its properties, its phenomena, and the abstract nature of its essence. One system of ontology has followed another in rapid succession ; each has flourished upon the arena of learning for a time, till, like its predecessor, each has been suddenly swept away by the production of some new system, and consigned to the stream of oblivion. This is essentially true with regard to the knowledge of the intimate nature and operations of mind ; and, after all the labours of the learned, after twenty centuries of waste of time, and talent, and ink, and paper, after the creation of countless folios, the very number of which would appal a modern author to contemplate, the last writer upon the subject tells us that all that is past is the mere frivolity of science and speculation, and that, in fact, we know nothing about the matter. Since one of the mental operations is to form the subject of this series of lectures, a prefatory notice of the nature of mind may be considered indispensable.

“ The mind,” observes Abercrombie, “ is that part of our being which thinks and wills, remembers and reasons ; we know nothing of it except from these functions. By means of the corporeal senses, it holds intercourse with the things of the external world, and receives impressions from them, but of this connexion we know nothing except the facts : when we attempt to speculate upon their cause, we wander, at once, from the path of philosophical enquiry, into conjectures which are so far beyond the proper sphere, as they are beyond the reach of the human faculties. The object of true science, in such

* The following is the first of a series of Lectures, delivered at the Birmingham Philosophical Institution, by the author.

a subject, is simply to investigate the facts, or the relations of phenomena, respecting the operations of mind itself, and the intercourse which it carries on with the objects in the world about it.”*

The mind having acquired the knowledge of facts, through the medium of the senses, disposes of them in a number and variety of ways, which are termed, by metaphysicians, the powers or functions of the mind, the mental or intellectual operations. For instance, we remember the facts wherewith we have become acquainted, and can call them to mind at pleasure; the first of these processes is *Memory*, the second that modification of it termed *Recollection*.

We can compare facts with each other, observe their relations and connexions, and trace the results which follow particular combinations of them: we also observe their general characters, so as to deduce, from the whole, general principles. This is the most useful of all the mental operations, and is named *Judgment*.

“There is a third power, by which the mind is enabled to separate scenes, or classes of facts, into their constituent elements, to form these elements into new combinations, so as to represent to ourselves pictures or collections of events which have no real existence in nature.”† This mental process is *Imagination*, and is that to which our attention will now be more particularly directed.

“*Phantasie*, or *Imagination*,” says the quaint and learned Burton, “is an inner sense, which doth more fully examine the species perceived by common sense,—or judgment, recalling them to mind again, in shapes, colours, and dresses of its own. In time of sleep, this faculty is free, and unfettered by the cooler dictates of reason: it then conceives strange, stupend, and absurd shapes, as in sick men we commonly observe. Its organ is the middle portion of the brain: its objects, all which are presented to it through the medium of the senses; by comparison of which it feigns infinite others unto itself. In melancholy men, this faculty is most powerful and strong, and often hurts, producing many monstrous and prodigious things, especially if it be stirred up by some terrible object, presented to it by sense or memory. In poets, painters, lovers, and lunatics, imagination forcibly works, as appears by their several pictures

* Abercrombie, *On the Intellectual Powers*.

† Abercrombie, *Op. Cit.*, p. 99.

and images.”* This has not escaped the penetration of Shakespeare :

“ Lovers and madmen have such seething brains,
Such shaping fantasies, that apprehend
More than cool reason ever comprehends.
The lunatic, the lover, and the poet,
Are of imagination all compact :
One sees more devils than vast Hell can hold ;
This is the madman : the lover, all as frantic,
Sees Helen’s beauty in a brow of Egypt.
The poet’s eye, in a fine phrenzy rolling,
Doth glance from heaven to earth, from earth to heaven ;
And, as imagination bodies forth
The forms of things unknown, the poet’s pen
Turns them to shape, and gives to airy nothing
A local habitation, and a name.”

Two writers of great reputation, Addison and Akenside, have composed set treatises on the pleasures of imagination ; but no writer has, as yet, depicted its pains. The ideas which these authors attached to that function of the mind termed the imagination, were, in some measure, different from the definition which I have given of it. The pleasures of imagination were, in the opinion of Addison, those furnished by the sense of vision, and were evidently pleasures of sense, and not of imagination. “ By the pleasures of imagination, or fancy,” says this Essayist, “ I here mean such as arise from visible objects, either when we have them actually in our view, or when we call up their ideas into our minds by paintings, statues, or descriptions. We cannot, indeed, have a single image in the fancy, that did not make its first entrance through the sight.” In the first acception of the term, as used by Addison, the pleasures or pains which arise from visible objects before the eyes, are strictly those of sense : when furnished to the mind by description or painting, by word or idea, if they are attended by precisely the same circumstances which attended them in their presentation to the mind in a visible state, memory only is concerned, the object is recalled in its true and real character or

* Burton, *Anatomy of Melancholy*.

state; and it is only when the properties of an object, as its colour, form, and size, are changed, or the component parts of a scene, or multiplicity of objects are presented to the mind in a different series or manner to that which they actually possess in nature, that the imagination, strictly speaking, is called into play.

This is plainly the real meaning of the term, and that mental operation which the word is intended to represent. And in this sense has it been used by Shakspeare (than whom no poet ever possessed it in a more eminent degree), in the passage from *The Midsummer Night's Dream*, before quoted. It is manifest that the imagination of his lunatic, his lover, and his poet, consisted in pictures, or combinations of events, which had no real existence. Thus, the madman saw more devils than vast hell could hold. This was no fancy on the part of the poet, but a mere description of the state of the lunatic, or hypochondriac, as it existed in nature. And, for illustrations of this, I refer to the case of Nicolai, the Prussian bookseller, who fancied his room teeming with human spectres; and, also, to the case of the young nobleman (detailed by Sir Walter Scott, in his *Letters on Demonology and Witchcraft*), whose imagination daily peopled his dining-room with a band of attendant spirits.

I advance these cases, not for the purpose of shewing that these freaks of the imagination were dependant, as they evidently were, upon derangement of the bodily health, but to illustrate the actual phenomena of that mental process named Imagination, which, whether exemplified in the sane or the insane, whether acting in our dreams or in our waking hours, is occupied by scenes or visions which have no existence in nature, from the high-colouring which leads the poet to shade the leaf with a brighter green than that which nature's tried and cunning hand laid on, to the terrific visions of the maniac, in the cells of the Senavra, the Bicêtre, or Bedlam.

The most simple exemplification of Imagination is that which leads poets to divest their narratives of the dull reality of truth, and to heighten their descriptions by an assemblage of beauties which, though existing in a diffusive state, have yet no reality in a state of combination. Milton's garden of Eden is a familiar example:

“ Thus was this place

A happy rural seat of various views,
Groves whose rich trees wept odorous gums and balm.

* * * * *

Between them, lawns, or level downs, and flocks
Grazing the tender herb, were interposed.

Or palmy hillock ; or the flowery lap
Of some irriguous valley, spread her store,
Flowers of all hue, and, without thorn, the rose.

Another side, umbrageous grots and caves
Of cool recess, o'er which the mantling vine
Lays forth her purple grape and gently creeps
Luxuriant.

The birds their quire apply ; airs, vernal airs,
Breathing the smell of field and grove, attune
The trembling leaves ; while universal Pan,
Knit with the Graces and the Hours, in dance
Led on the eternal spring.”

This, as an example of Shakspeare's third illustration of Imagination, is perhaps one of the best that could be adduced. The description of the garden as a paradise, or place of unmingled beauty and delight, is perfect. But the variety of excellence introduced is utterly at variance with all natural scenery. Here we have “the crisped brook rolling on orient pearl and sands of gold,”—the rose without a thorn,—the Hesperian apple in the garden of Eden, and the extravagancies of the Roman and Grecian mythology in the paradise of Adam and Eve. Here we have the elements of real scenes formed into new combinations, by the fancy of the poet, and constituting pictures which have no real existence. Here, strictly speaking,

“ As imagination bodies forth

The forms of things unknown, the poet's pen
Turns them to shape, and gives to airy nothing
A local habitation and a name.”

Shakspeare's lover furnishes us with another illustration of Imagination, equal to that of his poet and his madman. “The lover, all as frantic, sees Helen's beauty in a brow of Egypt.” Love is like a false glass, which represents everything fairer than it is. This

species of hyperbole, this investment of beauty, and even mediocrity, with a galaxy of charms culled from the whole garden of nature, has been used by poets of every age and nation, and the description of imaginary excellence with which they clothed, as with a garment, their mistresses, constitutes some of their greatest beauties. Thus, in the language of Miss Landon,

“Love is like the glass,
That throws its own rich colour over all,
Making all beautiful.”

So Chaucer, in *The Knight's Tale*, in his description of Emilia,

“ Emilia that was fairer to be seen
Than the white lily on her stem of green ;
And fresher is than May with flowers new,
For with the rose's colour strove her hue.
I not which was the lovelier of the two.”

So Phaon to Sappho, who actually possessed the dark tinge of the Egyptian countenance—so Abelard to Eloise—Polyphemus to Galatæa—Petrarch to Laura—Tasso to Leonora—and Spencer in his beautiful picture of Una:—

“ Her angel's face,
As the great eye of heaven, shined bright,
And made a sunshine in the shady place.
Did never mortal eye behold such heavenly grace.”

Such are the illustrations which I have chosen to elucidate the definition of Imagination, which I gave at the commencement of the lecture, viz., that it is a mental operation which takes the elements or detached parts of real scenes or events, and combines them, or concatenates them, in a manner, or series, which has no existence in nature.

The vividness of Imagination is extremely variable, from the individual who hardly understands the meaning of metaphor, to him who lives in a world peopled by creatures of his own. Benvenuto Cellini, a Florentine artist of great celebrity, the celebrated Mo-

lanus, and our own visionary Blake, were striking examples of the latter class. In fact, to such a pitch did the imagination of the two latter carry them, that it would be difficult to draw a strict line of separation between the vivid play of their fancy, and an actual degree of insanity. The latter, however, consisting in mental alienation or perversion upon one or more subjects dependant upon actual bodily complaint, or from strong moral impression, the affection having a commencement distinctly traceable to one of these causes; whilst the most vivid or exalted imagination is as much part of the natural constitution of the mind, as superior strength or agility is of that of the body. The constitutions of the minds of men are as diversified as the temperament of their bodies; and it is surprising that, as physiologists have frequently founded classification of one, that metaphysicians have not attempted arrangements of the other.

Ignorance as to the nature of the thing sought or avoided, leads the imagination generally to invest it with a brighter or darker hue than it really possesses in nature. This pictured the world to the imagination of Rasselas, when captive in the happy valley, as a paradise of varied pleasure, in which every man, wandering according to the bent of his own wish or inclination, enjoyed a perfect felicity. The same cause pictures it to the recluse of the convent as a den of misery in which vice stalks fearlessly and at large, uncontrolled by any opposing virtue. A vivid and playful imagination, which heightens the beauty of natural objects, or combines them in pleasing though unreal scenes, is an element of a well-ordered and a well-cultivated mind. But when, to the exclusion of the other powers of the mind, she assumes the despot and calls the passions round her dark and splendid throne, obedient to her dictates and her will, no power remains to control or regulate the mental ray, which inflames the whole soul and exalts it into the fervour of enthusiasm, hurries it into the extravagance of superstition, or precipitates it into the frenzy of fanaticism;—these being the highest steps imagination reaches before throwing off, at once, the feeble shackles with which reason still confines her, she gives loose to all her powers, and plunges, at once, into lunacy or mania.

In the inhabitants of northern climates, in the temperate man,

in those conversant with the world and daily mixing with the scenes of its common occurrences, Imagination seldom assumes a paramount or overwhelming sway; but in the dweller of the south, in the recluse, in the student, in the drunkard, and in the opium-eater, its workings are powerful and varied, and give birth to phenomena pleasing, melancholy, and terrific.

The natives of the south are a lively, versatile people, sanguine in their temperament, remarkable for the predominance of the functions of the brain and nervous systems, and susceptible, to an extraordinary degree, of every impression. Their minds seem to inherit the brilliancy of their climate, and are rich with sparkling thoughts and beautiful imagery. Their passions are at the beck of an imagination which compounds its glowing scenes from materials of which the inhabitants of northern climes are totally ignorant. The objects, which present themselves to the senses there, call forth this faculty in its highest degree: the orange grove, yellow with golden fruit—

“The vines,—not nailed to walls,—from tree to tree festooned,”

the warm and equal temperature of the climate, which leading the bulk of the population to dwell in the open air, produces that constant and free interchange of word and thought so conducive to the exaltation of feeling and passion.

Conversant with every thing warm, and beautiful, and highly coloured, and sweetly smelling, and sweetly sounding, the mind is rich in those scenes which imagination has bodied forth in the pictures, statues, and poetry of the Italian and Spanish masters, in the designs and colouring of Titian, and Michael Angelo, in the Apollo Belvidere, the Medicean Venus, and in the works of Tasso, Dante, Petrarch, and Ariosto. All in the south tends to furnish the liveliest and most pleasing pictures to the imagination, those which the mind takes delight to dwell upon, and which lose nothing in the retention—

“the very language,
Which sounds as tho’ it should be writ on satin,
With syllables that breath of the sweet south.”

Other charms are not wanting to excite the imagination of the dweller of the south ; and here beauty, combined with the subtle and pleasing stimuli which are addressed to every sense, acts with a power exemplified only in the histories of Sappho, and Hero, and Leander.

The mental constitution cannot bear much additional excitement to that which is here woven round it in a state of nature. Neither opium, nor intoxicating liquids, nor raw beef-steaks—as in the case of Mrs. Radcliffe—are wanting to add vigour to the imagination. The quantity of liquor which scarcely ruffles the Norwegian's blood, would scatter madness and fever through the brain of the Italian or Hindoo. This depends upon the quality of the climate and its products, and the peculiar physical and moral frame to which that quality gives rise.

The mental constitution of man is modified by other agents, besides those resulting from climate and natural situation ; one of the most powerful of which is solitude. This tends, from circumstances I shall presently mention, to strengthen some of the faculties of the mind, to the deterioration or weakening of others,—to heighten the vigour of the imagination, and proportionally to depress the faculties of reason and judgment by which its flights are controlled. The peculiar pleasures or pains which are the result of an excited imagination, in solitude, are regulated, in a great measure, by the previous natural bias of the mind, the pleasures which most occupied it, and the pursuits to which it was most addicted. If the poet turn recluse, his solitude will glow with visions of a brighter hue than those which he called up when his imagination was weakened by the impression of a variety of objects upon his senses. If the painter, the pictures of his imagination in the garret, the cell, or the dungeon will be brighter in their colours than any scenery which nature ever presented to his view. If he be fanatic or enthusiast, angels will visit his bed, and reveal to his disordered fancy more absurdities than are to be found in the visions of Mohammed, or the pages of the Koran. Owing to this, Cellini, (in the prisons of the Vatican, with a mind previously enthusiastic on the subject of religion), fancied himself visited with manifestations of divine glory, and miraculous appearances and communications from

the Virgin. The painter, Blake, in the solitude of his garret, called up the shades of spirits obedient to his will, and transferred portraits to his canvass of persons whose bodies had been dust for centuries,—the originals of which were furnished to him by the activity of his own vivid and extraordinary fancy.

The senses are the natural media through which the mind derives all its ideas, by which we become acquainted with the properties of things, the meaning of words, and the characters and dispositions of men. The greater the variety in which these are presented to a sound mind, the stronger will the reasoning powers of that mind become. We easily collect the result of past occurrences, apply them to the determination of the present, and conjecture, with a certain degree of probability, what will be the lot of the future. With this process Imagination has little to do, and in men thus conversant with the facts of natural or moral philosophy, with the occupation of the merchant, or the business of legislation, its pinions are feeble, and seldom bear it above the truths of sober reality. In solitude the case becomes widely different; the same objects are witnessed day after day, the same sights are presented to the eye, and the same sounds fatigue the ear. The mind, drawing its ideas from these limited resources, bodies forth creatures of its own, gives to them its own colour, and stamps them with its own perverted image; endowing them with properties which, in nature, they do not possess, it becomes fixed upon one subject, some favourite science, some cherished study, and forgets that the world possesses anything beyond either to fear, desire, or love.

The effect of solitude upon the Imagination has been admirably illustrated by Dr. Johnson, in his history of the Astronomer of Cairo, and the mode in which the cure of his diseased fancy was effected by Rasselas and his sister.

Here we have the true state of mind portrayed which is frequently produced by long-continued attention to any one object or study. The astronomer, who had spent forty years in unwearied attention to the motions and appearances of the heavenly bodies, and had drawn out his soul in endless calculations, naturally enough fancied that he had acquired some influence over them, that he possessed the regulation of the weather, and the distribution of the

seasons; that the sun listened to his dictates, and passed from tropic to tropic by his direction; that the clouds, at his call, poured out their waters; that the Nile overflowed at his command; that he restrained the fury of the dog-star, and mitigated the fervour of the crab.

Let us follow him into the world to which he had been gradually allured and restored, by the elegance of the manners, and the charms of the conversation, of Nekayah and her favourite. We here find him mingling in the gay tumult of life, and dividing his hours by a succession of amusements; and as realities rise up in greater variety and combination around him, we find the conviction of his authority over the skies fade gradually from his mind; though such was the dangerous prevalence of the primitive and long-cherished power his fancy exerted, that a temporary return to silence and himself brought back the fallacies his imagination had created, in nearly their pristine force and vigour. "If I am accidentally left alone for a few hours," said he, "my inveterate persuasion rushes upon my soul, and my thoughts are chained down by some irresistible violence; but they are soon disentangled by the prince's conversation, and instantaneously released at the entrance of Pekuah. I am like a man habitually afraid of spectres, who is set at ease by a lamp, and wonders at the dread which harassed him in the dark; yet, if his lamp be extinguished, feels again the terrors which he knows that, when it is light, he shall feel no more."

Long-continued study commonly produces fancies as perverted as those which possessed the astronomer of Cairo, to which I have just alluded. Independent of the bodily disorders which act upon the mental constitution of the student, from his sedentary life, the mind, like the constantly strung bow, will, sooner or later, lose its elasticity, and, at length, break. It is true that the prevalence of imagination to which over-much study gives rise, is, during the last half century, much diminished, owing to the vast progress which all branches of natural philosophy have made during this period. We have now no searchers after the philosopher's stone. Alchemy is but a dream of the sciences of past days, and its devotees are known no more. The occult sciences, necromancy and witchcraft, number none of the students of the nineteenth century

among their classes ; the volumes which treat of them have passed away ; they have been swept down the stream of time, and now and then only is one to be found, which has been washed, by the force of the current, upon the bank, as a relic of the labour and folly of past ages, which that stream has hurried away to eternal oblivion. It is, doubtless, owing to the nature of the studies of the present day, that they affect the mind in so comparatively trifling a degree. If we turn to the records of antiquity, we find numberless treatises on the mental affections which result from the diseased imagination of students. We are there told of peculiar hallucinations which come from over-much study. Of the dotage and insanity of students, the inevitable and almost certain consequence of their occupation, which, in the language of Cicero, "is a continual and earnest meditation, applied to something with great desire." The account which Manfred gives of his studies well illustrates this kind of application and its effects—

" I dived,

In my lone wanderings, to the caves of death,
Searching its cause in its effect ; and drew
From wither'd bones, and skulls, and heap'd-up dust,
Conclusions most forbidden. Thus I pass'd
The nights of years in sciences untaught,
Save in the old time ; and with time, and toil,
And terrible ordeal, and such penance
As in itself hath power upon the air,
And spirits that do compass air and earth,
Space, and the peopled infinite, I made
Mine eyes familiar with Eternity,
Such as, before me, did the Magi, and
He who, from out their fountain dwellings, raised
Eros and Anteros, at Gadara."

Reason must draw all its materials from the facts which it witnesses or from those which it knows to have taken place. Imagination, on the contrary, acts upon its own premises, themselves the production of a perverted fancy. The sciences which are purely speculative, are those which most endanger the reasoning faculties of the student pursuing them ; such are those which relate to the nature of

mind, of spiritual essences, and those enchained in the fetters, or bewildered in the light of a false religion. The folly of metaphysics is fast disappearing; demonology has no more advocates; and the insanity of the recluse and the devotee are scarcely to be met with, save in the followers of Brahma or Mahomet, among the individuals and nations of the east. Grief, labour, care, pale sickness, miseries, fear, filthy poverty, and hunger, are, according to Burton, the appenage of the speculative student; his income, his benefice, and his patrimony—

“Vainest of all!—the student’s theme,
Ends in some metaphysic dream.”

The mind has, doubtless, different faculties, which, in their action, are independent of each other, and which are excited or depressed by agents which do not act in a similar manner upon all. Thus, the imagination, memory, and judgment are properties distinct in all their phenomena. We have noticed the effect of solitude and study upon the former. We have seen it rendered more brilliant, gloomy, and despotic by the influence these several agents have exercised over it: on the other hand, the memory has not been at all affected, whilst the judgment has been materially weakened or altogether paralyzed. The effects which these produce upon the mind, are of a more lasting character than those I am now about to speak of: they are long in producing any morbid changes in its action; but these changes are of a serious character, and it requires a considerable period of time to restore the mental functions to their pristine strength, balance, and vigour, even after the causes affecting them have been removed. Alcohol, in its varied states of combination, and opium have marked and striking effects upon the imagination of some individuals, though not equally upon all. The minds of men of lofty genius possess a susceptibility and delicacy of structure which unfit them for the gross atmosphere of human nature as it is. Mr. Smellie, the friend of Robert Burns, observes that, “no sentient being, with mental powers greatly superior to those of man, could possibly live and be happy in this world. If such a being really existed,” continues he, “his misery

would be extreme. With senses more delicate and refined, with perceptions more acute and penetrating, with a taste so exquisite that the objects around him would by no means gratify it, obliged to feed on nourishment too gross for his mental frame, he must be born only to be miserable; and the continuation of his existence would be utterly impossible. Even in our present condition, the sameness and insipidity of objects and pursuits, the futility of pleasure, and the infinite sources of excruciating pain, are supported with difficulty by cultivated and refined minds. Increase our sensibilities, continue the same objects and desires, and no man could bear to live."

This is a faithful description of the temperament of the man of genius—of a mind endowed with qualities which common spirits can neither fathom nor understand. A mind of this stamp discovers beauty, where others see nothing but deformity; and retires with disgust from what the vulgar approach with satisfaction and pleasure. It at once detects a more luscious sweetness in the honey, but feels a more exquisite torture from the sting.

Genius combined with poverty is, of all conditions, that which is productive of most mental misery to its possessor. Even when united to competency, or wealth, the mental constitution of its owner is far from desirable, as the instances of Byron and Rousseau, Shenstone and Gray, among numerous others, sufficiently prove: but when obliged to minister to the selfishness, to feed the pride, or bend under the tyranny of beings it despises and hates, is it to be wondered at that the imagination is full of melancholy images, which are the more aggravated and distressing since the objects or causes which produce them are painted to the fancy of such minds with a strength and vividness of colouring which they do not really deserve?

It is to relieve feelings such as these that men of superior talents and attainments have had recourse to stimuli of various kinds, to dispel the dark phantoms of the imagination, and people it with objects and ideas of a brighter and more pleasing cast: and though the fumes of tobacco, in the cases of Newton and Hobbes; coffee, in those of Voltaire and Fontenelle; and cold water, in Demosthenes and Haller; have been the agents resorted to for this pur-

pose ; still alcohol, in the people of Europe, and opium, among the inhabitants of the east, are the magicians most generally employed to smother the dictates of the judgment, and to give unbounded licence to the dreams of an excursive and delighted fancy.

The effects produced by wine and spirit drinking on the temperament of individuals varies extremely ; hardly producing any exhilaration in some, whilst in others it excites the fiercest paroxysms of insanity. It is not my object here to enter into any medical detail of the morbid phenomena which are the result of the intemperate or habitual use of alcoholic liquors of any kind ; I shall, therefore, pass, in accordance with the nature of my subject, to their mental effects on what the late Dr. Currie, of Liverpool, has termed the temperament of sensibility, which Dr. Macnish, with equal truth, names the melancholy drunkard. To such men the bottle is a perfect witchery, and contains spells as powerful as Michael Scott's book of magic, filched, by the elfin page, from the vest of William of Deloraine. It clothes external nature with new forms of beauty—it adds whiteness to the lily, and perfume to the violet—it conceals all moral evil. To the minds thus influenced, the men are all virtuous, the women all beautiful, and mankind all happy. The joyousness which it excites breaks in upon habitual gloom, like sunshine upon darkness. Above all, the sensations, at the moment when mirth begins with its magic to charm away care, are inexpressible. Pleasure falls, in showers of fragrance, upon the soul, and the imagination revels in a delirium of short-lived joy.

“ Elysium opens round,

A pleasing frenzy buoys the lightened soul,
And sanguine hope dispels the fleeting care ;
And what was difficult, and what was dire,
Yields to your prowess, and superior stars :
A deeper blue colours the cloudless sky,
A stiller calm deadens the sleeping wave,
No storm to ruffle, and no frost to chill,
No icy friendship here, no selfish love,—
But all is warm, and beautiful, and true.”

Hafiz among the Persians, and Anacreon among the Greeks, have

sung, in glowing strains, the pleasures of wine—not its physical and animal pleasures, but the mental delights springing from its effects upon heated and poetic fancy—

“ Which bathes the drooping spirits in delight,
Beyond the bliss of dreams.”

Such are the pleasures imagination derives from intoxication. Let us reverse the picture, and behold its pains. And now melancholy, in her “ robe of darkest grain,” fills the disordered fancy with images of a ten-fold deeper gloom. When the visions of pleasure begin to fade, ideas of the most distressing and painful character rise to occupy their place. The imagination is now a perfect tyrant ; she shews her slave every species of imaginary evil, and accumulates all in one vortex upon his devoted head. The mind becomes a chaos of all that is dark, dreadful, and desponding. Phantoms, grotesque and horrible, rise and gibber at the unfortunate being ; and the conflict of contending fancies lashes him into a fit of excitation bordering on mania, or presses him down with the feelings of blank despair.

“ His cares return
With ten-fold rage ;
And such a dim delirium, such a dream
Involves him, such a dastardly despair
Unmans his soul, as madd’ning Pentheus felt
When, baited round Cithæron’s cruel sides,
He saw two suns and double Thebes ascend.”

These effects are not very commonly the result of the habitual or excessive use of wine ; but more than one instance has fallen under my own observation where it has produced visions of delight and forebodings of evil, equally vivid with those I have endeavoured to describe.

I now pass to the consideration of the influence of opium upon the imagination, and the modifications effected by it in the exercise of this class of mental operations. According to De Quincey, who styles himself the alpha and omega on all points connected with the use of opium ; “ its effects upon the human constitution differ materially from those produced by wine. Wine disorders the mental fa-

culties ; opium, on the contrary, if taken in a proper manner, introduces among them the most exquisite order, legislation, and harmony. Wine robs a man of his self-possession ; opium greatly invigorates it. Wine unsettles and clouds the judgment, and gives a preternatural brightness, and a vivid exaltation, to the contempts and the admirations, the loves and the hatreds, of the drinker ; opium, on the contrary, communicates serenity and equipoise to all the faculties, active or passive ; and with respect to the temper or moral feelings in general, it gives simply that sort of vital warmth which is approved by the judgment, and which would, probably, always accompany a bodily constitution of primeval or antediluvian health: Thus, for instance, opium, like wine, gives an expansion to the heart and benevolent affections, but with this remarkable difference that, on the sudden development of kind-heartedness which accompanies inebriation, there is always more or less of a maudlin character, which exposes it to the contempt of the bystander. Men shake hands, swear eternal friendship, and shed tears, no mortal knows why, and the sensual creature is clearly uppermost. But the expansion of the benigner feelings incident to opium, is no febrile excess, but a healthy restoration to that state which the mind would naturally recover, upon the removal of any deep-seated irritation or pain, that had disturbed and quarrelled with the impulses of a heart originally just and good. True it is that wine, up to a certain point, and with certain men, rather tends to exalt and steady the mind ; but still, it constantly leads a man to the brink of absurdity and extravagance, and, beyond a certain point, it is sure to volatilize and disperse the intellectual faculties : whereas opium always seems to compose what had been agitated, and to concentrate what had been distracted. Under the influence of opium the moral affections are in a state of cloudless serenity, and over all is the great light of the majestic intellect."

The effects of opium, like those of wine, are widely different upon different persons. I have known opium, taken with a view of removing melancholy and ennui, produce a state of delirium and watchfulness bordering upon insanity, instead of quieting the mind and producing those delightful sensations for which it has been so much extolled, and which, in a great majority of instances, it never

fails to excite.—Macnish, in his *Anatomy of Drunkenness*, observes, “The extacies of opium are more entrancing than those of wine; there is more poetry in its visions, more mental aggrandisement, more range of imagination. Opium, for hours after its use, gives a licence to the imagination, which is almost unbounded. It inspires the mind with a thousand delightful images, lifts the soul from earth, and casts a halo of poetic thought and feeling over the spirits of the most unimaginative. Under its influence, the mind wears no longer that blank, passionless aspect which, even in gifted natures, it is apt to assume: on the contrary, it is clothed with beauty as with a garment, and colours every thought that passes through it with the hues of wonder and romance.”

So intellectual are the imaginations of the opium-eater, that it is necessary a mind should be highly cultivated and exquisitely tasteful to enjoy, in perfection, the extacies to which it gives rise; since the very structure of the mind, thus influenced, furnishes the proper nourishment on which the imagination feeds. An ear naturally unmusical, or badly cultivated, could take no enjoyment in the most perfect harmony, in the most melodious air, or in the most spirited or heart-stirring chorus,—neither would opium produce this faculty, in the ear or in the mind: but supposing the taste for music to be acquired, it would heighten its pleasures a thousand-fold. One of the most delightful pictures ever drawn of the pleasures of an imagination heightened by opium, is that given by De Quincey, in his *Confessions of an English Opium-eater*: it relates to the pleasures imagination derives from music, when the mind is under the influence of opium; and to obtain these, he used to take his customary draught of laudanum-negus on the Tuesday or Saturday, which are the opera-nights, abstaining from it rigidly on the other evenings of the week, in order to increase his enjoyment on these. “At that time,” says he, “Grassini sang at the opera; and her voice was delightful to me beyond all that I had ever heard. Five shillings admitted one to the gallery, which was subject to far less annoyance than the pit of the theatres; the orchestra was distinguished, by its sweet and melodious grandeur, from all English orchestras, the composition of which are not, I confess, acceptable to my ear, from the predomi-

nance of the clangorous instruments, and the absolute tyranny of the violin. The chorusses were divine to hear; and when Grassini appeared in some interlude, as she often did, and poured forth her passionate soul as Andromache at the tomb of Hector, I question whether any Turk of all that ever entered the Paradise of opium-eaters, can have had half the pleasure I had. But, indeed, I honour the barbarians too much, by supposing them capable of any pleasures approaching to the intellectual ones of an Englishman: for music is an intellectual or a sensual pleasure, according to the temperament of him who hears it, and, with the exception of that fine extravaganza in *The Twelfth Night*,* I do not recollect more than one thing said adequately on the subject of music in all literature; it is a passage in the *Religio Medici* of Sir Thomas Brown, and though chiefly remarkable for its sublimity, has also a philosophic value, inasmuch as it points to the true theory of musical effects.† The mistake of some people is, to suppose that it is by the ear they communicate with music, and, therefore, that they are purely passive to its effects: but this is not so; it is by the re-action of the mind upon the notices of the ear, that the pleasure is constructed; and therefore it is that people, of equally good ear, differ so much on this point from each other. Now, opium, by greatly increasing the activity of the mind generally, increases, of necessity, that particular mode of its activity by which we are enabled to construct, out of the raw material of organic sound, an elaborate intellectual pleasure. A chorus displays before me, as on a piece of arras, the whole of my past life;—not as though recalled by an act of memory,—but as if present and incarnate in the music; no

* “That strain again;—it had a dying fall;
O, it came o’er my ear like the sweet south,
That breathes upon a bank of violets,
Stealing, and giving odour.”

† “Whatsoever is harmonically composed, delights in harmony: for even that vulgar and tavern music, which makes one man merry, another mad, strikes in me a deep fit of devotion, and a profound contemplation of the first composer. There is something in music of divinity, more than the ear discovers; it is an hieroglyphical and shadowed lesson of the whole world and creatures of God,—such a melody to the ear, as the whole world well understood would afford the understanding. In brief, it is a sensible fit of that harmony which intellectually sounds in the ears of God. I will not say, with Plato, that the soul is a harmony;—but harmonical, and hath its nearest sympathy unto music.”

longer painful to dwell upon, but the detail of its incidents removed, or blended in some hazy abstraction, and its passions exalted, spiritualized, and sublimed. All this was to be had for five shillings; and over and above the music of the stage and the orchestra, I had all around me, in the intervals of the performance, the music of the Italian language talked by Italian women—for the gallery was usually crowded with Italians—and I listened with a pleasure such as that with which Weld, the traveller, lay and listened, in Canada, to the sweet laughter of the Indian women; for the less we understand of a language, the more sensible we are to the melody or harshness of its sounds; for such a purpose, therefore, it was an advantage to me, that I was a poor Italian scholar, reading it but little, and not speaking it at all, nor understanding a tenth part of what I heard spoken.”

I have now traced the history of the general phenomena of the imagination, as a component part of the sound mind, in its healthy or natural state. We have seen the peculiarities induced in its exercise by climate, constitution, and education; and also the modification impressed upon it by other moral and physical agents, as the passions, wine, and opium. In the next lecture, I shall pass to the consideration of the imagination during sleep, as it is manifested in the phenomena of dreaming, and to the effects of certain agents upon it in this state, which exalt and change its mode of action.

[The subsequent four Lectures on the Imagination, consisting of the Imagination of Dreamers,—of Sleep-walkers,—of the Insane,—and on the Hallucinations produced by the Imagination, will appear in subsequent numbers of *The Analyst*.]

THE BIRDS OF BRITAIN, SYSTEMATICALLY ARRANGED.

ORNITHOLOGICAL nomenclature is now beginning to receive that attention to which its importance entitles it ; and, consequently, the path of the student in this fascinating branch of science will not be so frequently obstructed by those barbarous anomalies so unsparingly created by the thoughtless, the ignorant, and the prejudiced. Not only are signs of improvement becoming visible in the standard Ornithological works, but also in periodicals and scrap-books, as may be observed in Jesse's *Gleanings in Natural History*, and other publications of a similar kind. A writer in that popular periodical, *The Mirror*, after making some very just remarks on nomenclature, observes, "I take leave to suggest that the British birds should have the Latin names used in that masterly work, Selby's *British Ornithology*. For English names, I know of no work that would serve as a guide. The best rule is, that each genus should have an English name peculiar to itself."—Vol. xxvi., p. 69. Although I am sorry to say that this rule is very frequently transgressed in the *first* volume of Selby, containing the land birds ; yet, in the *second* volume, such errors are very rarely met with,—perhaps there are not above half a dozen errors of the kind in his water birds. The water birds not being so popularly known as the land birds, may, possibly, be assigned as a reason why the difficulty of affixing appropriate names to them is not so great. But no obstacles should deter the scientific man from aiming at scientific accuracy ;—meet the difficulties boldly and they will vanish.

In a paper, "On the Nomenclature of Birds," which appeared in the last number of *The Analyst*, I gave a list of the land birds, and promised, at a future time, to give the Grallatores and Natatores, commonly called water birds. I now propose, however, to give the whole of the birds of Britain together ; not only because the table will thus be much more convenient for reference, but on account of several errors having crept into the previous list, as *Ring Dove* for *Ring Pigeon*, *Anthus fuscus* for *Coridalla fusca*, *Columba turtur* for *Peristera turtur*, and some others, which will now be corrected, and many additions will also be made.

The Black Grouse (*Tetrao empetrum*) is there called the Black Lyurus, (*Lyurus tetrax*), and the Tree Capercaillie (*Caprimulgus arboræa*) was there designated Wood Grouse (*Tetrao arborea*). I adopted these names under the erroneous impression that the name of the family could never be changed. For instance, the genus Warbler, (*Sylvia*), is a typical one, and thus the family is named the Warbler family, (*Sylviidae*). Others, however, think the genus Kinglet, (*Regulus*), to be the typical genus, and thus, according to these, the names Warbler and *Sylvia* should be given to the genus Kinglet, in order that the old family name, *Sylviidae*, may remain: but would it not be much better to call the family the Kinglet family, (*Regulidae*)? The same with the Grouse: it is now generally agreed, that the genus Capercaillie is the type of the family;—thus, this may be called the Capercaillie family, (*Caprimulgidae*). On the other plan, the generic names would be constantly liable to change, and not a single counterbalancing advantage would be gained, to compensate for the confusion thus occasioned: by the mode now proposed, and which has been followed by some ornithologists, the generic name would never be altered.

The name *Coalhound* has been objected to, as a generic appellation, on the ground that species may hereafter be discovered which have no black on the head. The same objection will, however, apply also to Redbreast, Waxwing, Nutcracker, and others; so that if *Coalhound* is rejected on this ground, so ought these, also, to be discarded. Forktail has, likewise, been objected to, on account of its being applicable to other genera, as the Tern and Kite: but I do not know a single meaning name in Ornithology, (with the exception of Crossbill,—*Crucirostra*), which is proof against this objection: as examples, Woodpecker, Redstart, Dipper, Lobefoot, Longspur, Thickbill, Grosbeak, &c. &c., may be given. This is in favour of Dr. Lindley's opinion, that a good *unmeaning* generic name is the best,—as Lark, Pinnoc, Sparrow, Siskin, Snipe, Finch, Ossifrage, Bustard, &c. The same may, perhaps, be said of the Latin names.

I will now give the British birds, as divided, by Vigors, into five Orders, in accordance with the principles of the learned, profound and acute Macleay.

ORDER I.

PREYERS,—RAPTORES.

FAMILY II., VULTURE FAMILY,—(VULTURIDÆ.)

Abern, (Neophron, *Sav.*)Alpine Abern Neophron alpinus, (*W.*)

FAMILY III., FALCON FAMILY,—(FALCONIDÆ.)

Eagle Section,—(*Aquilinæ.*)Eagle, (*Aquila, Antiq.*)Golden Eagle *Aquila aurea*, (*Will.*)Ossifrage, (*Ossifraga, W.*)Common Ossifrage *Ossifraga albicilla*, (*W.*)Ospray, (*Pandion, Sav.*)Whiteheaded Ospray *Pandion leucocephalus*, (*W.*)*Hawk Section*,—(*Accipitrinæ.*)Gossuc, (*Astur, Bechst.*)Rock Gossuc, *Astur palumbarius*, (*Bechst.*)Hawk, (*Accipiter, Antiq.*)Common Hawk *Accipiter nisus*, (*W.*)*Falcon Section*,—(*Falconinæ.*)Falcon, (*Falco, Lin.*)Jer Falcon *Falco rupestris*, (*W.*)Peregrine Falcon *Falco peregrinus*, (*Lin.*)Hobby Falcon *Falco arboreus*, (*W.*)Redfooted Falcon *Falco rufipes*, (*Bechst.*)Kestrel Falcon *Falco tinnunculus*, (*Lin.*)Stone Falcon *Falco lapidarius*, (*Will.*)*Buzzard Section*,—(*Buteoninæ.*)Buzzard, (*Buteo, Bechst.*)Variegated Buzzard *Buteo variegatus*, (*W.*)Roughlegged Buzzard *Buteo lagopus*, (*Flem.*)Pern, (*Pernis, Cuv.*)Honey Pern *Pernis apivorus*, (*Cuv.*)Harrier, (*Circus, Bechst.*)Marsh Harrier *Circus rufus*, (*Bris.*)Blue Harrier *Circus cyaneus*, (*Flem.*)Ashcoloured Harrier *Circus cineraceus*, (*Shaw.*)*Kite Section*,—(*Milvinæ.*)Kite, (*Milvus, Antiq.*)Cinereous Kite *Milvus regalis*, (*Bris.*)Forktail, (*Elanus, Sav.*)Whiteheaded Forktail *Elanus leucocephalus*, (*N. Wood.*)

FAMILY IV., OWL FAMILY, (STRIGIDÆ.)

	Toadeater, (<i>Bubo, Antiq.</i>)
Tawny Toadeater	<i>Bubo flavipes, (W.)</i>
	Madge, (<i>Asio, Antiq.</i>)
Heath Madge	<i>Asio ulula, (N. Wood.)</i>
Ivy Madge	<i>Asio pinus, (W.)</i>
	Scops, (<i>Zorca, Antiq.</i>)
Tree Scops	<i>Zorca arborea, (W.)</i>
	Snowflake, (<i>Nictea, Stev.</i>)
Gray Snowflake	<i>Nictea cinerea, (Stev.)</i>
	Owl, (<i>Strix, Antiq.</i>)
Barn Owl	<i>Strix flammea, (Lin.)</i>
	Surn, (<i>Surnia, Antiq.</i>)
Ivy Surn	<i>Surnia stridula, (Stev.)</i>
	Nightling, (<i>Noctua, Cuv.</i>)
Brown Nightling	<i>Noctua funerea, (W.)</i>
Spotted Nightling	<i>Noctua passerina, (Selby.)</i>

ORDER II.

PERCHERS,—INSESSORES.

FAMILY I., BEE-EATER FAMILY,—(MEROPIDÆ.)

Yellowthroated Bee-eater	<i>Merops glandarius, (W.)</i>
	Roller, (<i>Coracias, Lin.</i>)
Garrulous Roller	<i>Coracias garrula, (Lin.)</i>

FAMILY II., SWALLOW FAMILY,—(HIRUNDINIDÆ.)

	Swallow, (<i>Hirundo, Antiq.</i>)
Barn Swallow	<i>Hirundo rustica, (Lin.)</i>
Eave Swallow	<i>Hirundo urbana, (Lin.)</i>
Bank Swallow	<i>Hirundo riparia, (Aldr.)</i>
	Swift, (<i>Cipselus, Illig.</i>)
Wall Swift	<i>Cipselus murarius, (Tem.)</i>
Alpine Swift	<i>Cipselus alpinus, (Tem.)</i>

FAMILY III., NIGHTJAR FAMILY,—(VOCIFERATORIDÆ.)

	Nightjar, (<i>Vociferator, N. Wood.</i>)
Fern Nightjar	<i>Vociferator melolontha, (W.)</i>

FAMILY V., KINGFISHER FAMILY,—(HALCIONIDÆ.)

	Kingfisher, (<i>Alcedo, Lin.</i>)
Minnow Kingfisher	<i>Alcedo splendens (W.)</i>

FAMILY I., TODY FAMILY,—(TODIDÆ.)

Flycatcher, (*Muscicapa*, *Lin.*)

Spotted Flycatcher	<i>Muscicapa grisola</i> , (<i>Lin.</i>)
Pied Flycatcher	<i>Muscicapa luctuosa</i> , (<i>Lin.</i>)
Whitenecked Flycatcher	<i>Muscicapa albicollis</i> , (<i>Tem.</i>)

FAMILY II., SHRIKE FAMILY, (*LANIADÆ.*)Shrike Section,—(*Lanianæ.*)Shrike, (*Lanius*, *Lin.*)

Gray Shrike	<i>Lanius excubitor</i> , (<i>Lin.</i>)
	Flusher, (<i>Collurio</i> , <i>Blyth.</i>)
Redbacked Flusher	<i>Collurio rufescens</i> , (<i>W.</i>)
Wood Flusher*	<i>Collurio rutilus</i> , (<i>Blyth.</i>)

FAMILY III., THRUSH FAMILY,—(TURDIDÆ.)

Thrush Section,—(*Turdinæ.*)

Missel Thrush	<i>Turdus viscivorus</i> , (<i>Will.</i>)
Mottledbacked Thrush	<i>Turdus punctatus</i> , (<i>W.</i>)
Field Thrush	<i>Turdus pilaris</i> , (<i>Will.</i>)
Redwinged Thrush	<i>Turdus iliacus</i> , (<i>Will.</i>)
Garden Thrush	<i>Turdus hortensis</i> , (<i>W.</i>)
Rusty Thrush	<i>Turdus varius</i> , (<i>Horsf.</i>)

Ouzel, (*Merula*, *Will.*)

Yellowbill Ouzel	<i>Merula hortensis</i> , (<i>W.</i>)
Ring Ouzel	<i>Merula torquata</i> , (<i>Will.</i>)

Antcatcher Section,—(*Miotherinæ.*)Dipper, (*Cinclus*, *Bechst.*)

Bank Dipper	<i>Cinclus rupestris</i> , (<i>W.</i>)
-------------	--

Oriole Section,—(*Oriolanæ.*)Oriole, (*Oriolus*, *Tem.*)

Garden Oriole	<i>Oriolus galbula</i> , (<i>Lin.</i>)
---------------	--

FAMILY IV., WARBLER FAMILY,—(SILVIADÆ.)

Chat Section,—(*Rubetrinæ.*)Wheatear, (*Vitiflora*, *Ray.*)

Fallow Wheatear	<i>Vitiflora cinerea</i> (<i>Bris.</i>)
-----------------	---

Chat, (*Rubetra*, *Bris.*)

Whin Chat	<i>Rubetra migratoria</i> , (<i>Blyth.</i>)
Stone Chat	<i>Rubetra lapidaria</i> , (<i>W.</i>)

Redbreast, (*Rubecula*, *Antiq.*)

Robin Redbreast	<i>Rubecula familiaris</i> , (<i>Blyth.</i>)
-----------------	--

* Selby calls this bird "Wood Chat," but it has no more resemblance to the genus *Chat* (*Rubetra*), than it has to the Crow (*Corvus*).

Redstart, (<i>Ruticilla</i> , (<i>Will.</i>))	
Wall Redstart	<i>Ruticilla luscinia</i> , (<i>W.</i>)
Blackthroated Redstart	<i>Ruticilla nigricollis</i> , (<i>W.</i>)
Fantail, (<i>Pandicilla</i> , (<i>Blyth.</i>))	
Bluethroated Fantail	<i>Pandicilla suecia</i> , (<i>Blyth.</i>)
<i>Nightingale Section</i> ,—(<i>Philomelinae</i> .)	
Brakehopper, or Locustel, (<i>Locustella</i> , <i>Will.</i>)	
Sibilous Brakehopper*	<i>Locustella sibilaria</i> , (<i>W.</i>)
Reedling, (<i>Salicaria</i> , (<i>Selby.</i>))	
Sedge Reedling	<i>Salicaria phragmitis</i> , (<i>Selby.</i>)
Marsh Reedling	<i>Salicaria arundinacea</i> , (<i>Selby.</i>)
Nightingale, (<i>Philomela</i> , (<i>Antiq.</i>))	
Brake Nightingale	<i>Philomela luscinia</i> , (<i>Sw.</i>)
Fauvet, (<i>Ficedula</i> , (<i>Antiq.</i>))	
Blackcap Fauvet	<i>Ficedula atricapilla</i> , (<i>Aldr.</i>)
Garden Fauvet	<i>Ficedula hortensis</i> , (<i>Blyth.</i>)
Whitethroated Fauvet	<i>Ficedula cinerea</i> , (<i>Blyth.</i>)
Garrulous Fauvet	<i>Ficedula garrula</i> , (<i>Blyth.</i>)
<i>Warbler Section</i> ,—(<i>Silvianæ</i> .)	
Whinling (<i>Melizophilus</i> , <i>Leach.</i>)	
Redeyed Whinling	<i>Melizophilus provincialis</i> , (<i>Leach.</i>)
Warbler, (<i>Silvia</i> , (<i>Auct.</i>))	
Hedge Warbler	<i>Silvia hippolais</i> , (<i>Lath.</i>)
Wood Warbler	<i>Silvia sibilans</i> , (<i>Bechst.</i>)
Willow Warbler	<i>Silvia melodia</i> , (<i>Blyth.</i>)
Kinglet, (<i>Regulus</i> , (<i>Cuv.</i>))	
Common Kinglet	<i>Regulus auricapillus</i> , (<i>Selby.</i>)
Firecrested Kinglet	<i>Regulus ignicapillus</i> , (<i>Mudie.</i>)
<i>Tit Section</i> ,—(<i>Parianæ</i> .)	
Tit, (<i>Parus</i> , (<i>Auct.</i>))	
Garden Tit	<i>Parus hortensis</i> , (<i>W.</i>)
Blue Tit	<i>Parus cæruleus</i> , (<i>Gesn.</i>)
Marsh Tit	<i>Parus palustris</i> , (<i>Gesn.</i>)
Coal Tit	<i>Parus ater</i> , (<i>Gesn.</i>)
Crested Tit*	<i>Parus cristatus</i> , (<i>Aldr.</i>)
(Longtail, (<i>Afedula</i> , (<i>W.</i>))	
Common Longtail	<i>Afedula sonans</i> , (<i>W.</i>)
Pinnoc, (<i>Calamophilus</i> , <i>Leach.</i>)	
Bearded Pinnoc	<i>Calamophilus biarmicus</i> , (<i>Leach.</i>)

* For an account of the habits of the Sibilous Locustel (*Locustella sibilans*, *W.*), see *The Field Naturalist's Magazine*.

† This bird must not be confounded with the Bicolored Tit (*Parus bicolor*, *Lin.*), found in North America.

	Dunnoc, (<i>Accentor</i> , <i>Cuv.</i>)
Hedge Dunnoc	<i>Accentor familiaris</i> , (<i>W.</i>)
	Annet, (<i>Curruca</i> , <i>Bechst.</i>)
Alpine Annet,	<i>Curruca alpina</i> , (<i>W.</i>)
	<i>Wagtail Section</i> ,—(<i>Motacillinae</i> .)
	Wagtail, (<i>Motacilla</i> , <i>Will.</i>)
Pied Wagtail	<i>Motacilla maculosa</i> , (<i>W.</i>)
Gray Wagtail	<i>Motacilla cinerea</i> , (<i>Will.</i>)
	Oatear, (<i>Budites</i> , <i>Cuv.</i>)
Spring Oatear	<i>Budites verna</i> , (<i>Cuv.</i>)
Grayheaded Oatear	<i>Budites neglecta</i> , (<i>W.</i>)
	Pipit, (<i>Anthus</i> , <i>Bechst.</i>)
Tree Pipit	<i>Anthus arboreus</i> , (<i>Bechst.</i>)
Meadow Pipit	<i>Anthus pratensis</i> , (<i>Bechst.</i>)
Rock Pipit	<i>Anthus petrosus</i> , (<i>Flem.</i>)
	Lavroc, (<i>Coridalla</i> , <i>Vig.</i>)
Tawny Lavroc	<i>Coridalla fusca</i> , (<i>W.</i>)

FAMILY V., CHATTERER FAMILY,—(AMPELIDÆ.)

	Waxwing, (<i>Bombicilla</i> , <i>Bris.</i>)
Hawthorn Waxwing	<i>Bombicilla cratægus</i> , (<i>W.</i>)

FAMILY I., GOLDWING FAMILY,—(CARDUELIDÆ.)

	<i>Lark Section</i> ,—(<i>Alaudinae</i> .)
	Lark (<i>Alauda</i> , <i>Auct.</i>)
Sky Lark	<i>Alauda arvensis</i> , (<i>Lin.</i>)
Red Lark	<i>Alauda rubra</i> , (<i>Lin.</i>)
Wood Lark	<i>Alauda arborea</i> , (<i>Lin.</i>)
	Longspur, (<i>Plectrophanes</i> , <i>Mey.</i>)
Snowy Longspur	<i>Plectrophanes nivalis</i> , (<i>Mey.</i>)
Rusty Longspur	<i>Plectrophanes mustelina</i> , (<i>W.</i>)
	Seedling, (<i>Miliaria</i> , <i>Blyth.</i>)
Tawny Seedling	<i>Miliaria canescens</i> , (<i>W.</i>)
	Bunting, (<i>Emberiza</i> , <i>Auct.</i>)
Yellow Bunting	<i>Emberiza citrinella</i> , (<i>Lin.</i>)
Reed Bunting	<i>Emberiza schæniculus</i> (<i>Lin.</i>)
Cirl Bunting	<i>Emberiza cirlus</i> , (<i>Lin.</i>)
Ortolan Bunting	<i>Emberiza hortulana</i> , (<i>Lin.</i>)
	<i>Goldwing Section</i> ,—(<i>Carduelinae</i> .)
	Sparrow, (<i>Passer</i> , <i>Auct.</i>)
House Sparrow	<i>Passer domesticus</i> , (<i>Aldr.</i>)
Tree Sparrow	<i>Passer arboreus</i> , (<i>Blyth.</i>)

	Goldwing, (<i>Carduelis</i> , <i>Auct.</i>)
Common Goldwing	<i>Carduelis elegans</i> , (<i>Stev.</i>)
Siskin Goldwing	<i>Carduelis spinus</i> , (<i>Cuv.</i>)
	Finch, (<i>Fringilla</i> , <i>Auct.</i>)
Chaff Finch	<i>Fringilla spiza</i> , (<i>Rennie.</i>)
Mountain Finch	<i>Fringilla montana</i> , (<i>Will.</i>)
	Grosbeak Section,—(<i>Coccothraustinae.</i>)
	Linnet, (<i>Linaria</i> , <i>Auct.</i>)
Garden Linnet	<i>Linaria cannabina</i> , (<i>Sw.</i>)
Mountain Linnet	<i>Linaria montana</i> , (<i>Will.</i>)
Alder Linnet	<i>Linaria pusilla</i> , (<i>Blyth.</i>)
	Grosbeak, (<i>Coccothraustes</i> , <i>Gesn.</i>)
Haw Grosbeak	<i>Coccothraustes crataegus</i> , (<i>Blyth.</i>)
Green Grosbeak	<i>Coccothraustes chloris</i> , (<i>Flem.</i>)
	Coalhood Section,—(<i>Pirulinæ.</i>)
	Crossbill, (<i>Crucirostra</i> , <i>Mey.</i>)
Pippin Crossbill	<i>Crucirostra malum</i> , (<i>W.</i>)
Pine Crossbill	<i>Crucirostra pinetorum</i> , (<i>Meyer.</i>)
	Coalhood, (<i>Pirula</i> , <i>Auct.</i>)
Hedge Coalhood	<i>Pirula modularis</i> , (<i>W.</i>)
	Thickbill, (<i>Densirostra</i> , <i>W.</i>)
Pine Thickbill	<i>Densirostra enucleator</i> , (<i>W.</i>)

FAMILY II., STARLING FAMILY,—(*STURNIDÆ.*)

	Starling, (<i>Sturnus</i> , <i>Lin.</i>)
Spotted Starling	<i>Sturnus varius</i> , (<i>Mey.</i>)
Brown Starling	<i>Sturnus unicolor</i> , (<i>Sw.</i>)
	Amzel, (<i>Pastor</i> , <i>Tem.</i>)
Rosecoloured Amzel	<i>Pastor roseus</i> , (<i>Tem.</i>)

FAMILY III., CROW FAMILY,—(*CORVIDÆ.*)

	Crow, (<i>Corvus</i> , <i>Lin.</i>)
Raven Crow	<i>Corvus corax</i> , (<i>Lin.</i>)
Carrion Crow	<i>Corvus corone</i> , (<i>Lin.</i>)
Hooded Crow	<i>Corvus cinerea</i> , (<i>W.</i>)
Rook Crow	<i>Corvus nudirostra</i> , (<i>Palmer.</i>)
Daw Crow	<i>Corvus monedula</i> , (<i>Lin.</i>)
	Pie, (<i>Pica</i> , <i>Will.</i>)
Mag Pie	<i>Pica melanoleuca</i> (<i>Vieill.</i>)
	Jay, (<i>Garrulus</i> , <i>Briss.</i>)
Garden Jay	<i>Garrulus glandarius</i> , (<i>Selby.</i>)
	Chuf, (<i>Fregilus</i> , <i>Cuv.</i>)
Redlegged Chuf	<i>Fregilus graculus</i> , (<i>Cuv.</i>)

Nutcacker, (*Nucifraga*, *Auct.*)Spotted Nutcacker, *Nucifraga punctata*, (*W.*)FAMILY II., WOODPECKER FAMILY,—(*PICIDÆ*.)Woodpecker, (*Picus*, *Antiq.*)Black Woodpecker *Picus martius*, (*Lin.*)Pied Woodpecker *Picus maculosus*, (*W.*)Barred Woodpecker *Picus virgatus*, (*W.*)Hairy Woodpecker *Picus villosus*, (*Lin.*)Popin, (*Chrysophilus*, *Sw.*)Green Popin* *Chrysophilus viridis*, (*Sw.*)Wryneck, (*Torquilla*, *Will.*)Zigzag Wryneck *Torquilla striata*, (*W.*)FAMILY III., CREEPER FAMILY, (*CERTHIADÆ*.)Nuthatch, (*Sitta*, *Will.*)Gray Nuthatch *Sitta cæsia*, (*Mey.*)Creeper, (*Certhia*, *Will.*)Hazel Creeper *Certhia familiaris*, (*Lin.*)Wren, (*Anorthura*, *Rennie.*)Ivy Wren *Anorthura troglodites*, (*Morris.*)Hoopoo, (*Upupa*, *Antiq.*)Marsh Hoopoe *Upupa palustris*, (*W.*)FAMILY IV., CUCOO FAMILY, (*CUCULIDÆ*.)Cuckoo, (*Cuculus*, *Antiq.*)Gray Cuckoo *Cuculus canorus*, (*Lin.*)

ORDER III.

SCRATCHERS,—RASORES.

FAMILY I., PIGEON FAMILY,—(*COLUMBIDÆ*.)Pigeon, (*Columba*, *Antiq.*)Ring Pigeon *Columba palumbus*, (*Lin.*)Wood Pigeon *Columba arborea* (*N. Wood.*)Rock Pigeon *Columba livia*, (*Lin.*)Dove, (*Peristera*, *Boié.*)Turtle Dove *Peristera turtur*, (*Boié.*)Sprigtail, (*Ectopistes*, *Sw.*)Passenger Sprigtail *Ectopistes migratoria*, (*Sw.*)

* The Three-toed Aptern (*Apternis tridactylus*, *Sw.*)—the *Picus tridactylus*, of Linnæus—is, by some, reckoned a British bird.

FAMILY III., CAPERCAIL FAMILY,—(CAPRICALIDÆ.)

Grouse, (Tetrao, *Lin.*)

Black Grouse	Tetrao empetrum, (<i>W.</i>)
	Capercaill, (Capricalea, <i>Nils.</i>)
Wood Capercaill	Capricalea arborea, (<i>W.</i>)
	Ptarmigan, (Lagopus, <i>Vieil.</i>)
Red Ptarmigan	Lagopus britannicus, (<i>W.</i>)
White Ptarmigan	Lagopus mutus, (<i>Leach.</i>)
Rock Ptarmigan	Lagopus rupestris, (<i>Auct.</i>)
	Partridge, (Perdix, <i>Antiq.</i>)
Gray Partridge	Perdix cinerea, (<i>Will.</i>)
	Quail, or Cwail, (Coturnix, <i>Will.</i>)
Common Quail	Coturnix migratoria, (<i>W.</i>)
	Redfoot, (Rufipes, <i>Blyth.</i>)
Guernsey Redfoot	Rufipes picta, (<i>W.</i>)

FAMILY V., OSTRICH FAMILY,—(STRUTHIONIDÆ.)

Bustard, Otis, (*Lin.*)

Turnip Bustard	Otis tarda, (<i>Lin.</i>)
	Buzzard, (Tetrax, <i>Leach.</i>)
Field Buzzard	Tetrax campestris, (<i>Leach.</i>)

ORDER IV.

WADERS,—GRALLATOIRES.

FAMILY I., CRANE FAMILY,—(GRUIDÆ.)

Trumpeter, (Psophia, *Lin.*)

Black Trumpeter	Psophia crepitans, (<i>Lin.</i>)
	Crane, (Grus, <i>Auct.</i>)
Cinereous Crane	Grus cinerea, (<i>Bechst.</i>)

FAMILY II., HERN FAMILY,—(ARDEIDÆ.)

Hern, (Ardea, *Auct.*)

Common Hern	Ardea cinerea, (<i>Lath.</i>)
Purple Hern	Ardea purpurea, (<i>Lin.</i>)
White Hern	Ardea alba, (<i>Lin.</i>)
Egret Hern	Ardea garzetta, (<i>Lin.</i>)
Buff-backed Hern	Ardea russata, (<i>Wagler.</i>)
Squacco Hern	Ardea castanea, (<i>Gmel.</i>)
	Bittern (Botaurus, <i>Auct.</i>)
Tawney Bittern	Botaurus stellaris, (<i>Stev.</i>)
Freckled Bittern	Botaurus lentiginosus, (<i>Stev.</i>)

Rayed Bittern	<i>Botaurus rufus</i> , (<i>Bris.</i>)
Malmarsh, (<i>Cancrofagus</i> , <i>Bris.</i>)	
Blackheaded Malmarsh	<i>Cancrophagus luteus</i> , (<i>Bris.</i>)
Gray Malmarsh	<i>Cancrofagus bahamensis</i> , (<i>Bris.</i>)
Stork, (<i>Ciconia</i> , <i>Auct.</i>)	
White Stork	<i>Ciconia alba</i> , (<i>Will.</i>)
Black Stork	<i>Ciconia nigra</i> , (<i>Will.</i>)
Spoonbill, (<i>Platalea</i> , <i>Auct.</i>)	
White Spoonbill	<i>Platalea leucorodea</i> , (<i>Lin.</i>)
Ibis, (<i>Ibia</i> , <i>Antiq.</i>)	
Glossy Ibis	<i>Ibis ignea</i> , (<i>Steph.</i>)

FAMILY III., SNIPE FAMILY,—(*SCOLOPACIDÆ*.)

Curlew, (<i>Numenius</i> , <i>Lath.</i>)	
Common Curlew	<i>Numenius arquata</i> , (<i>Lath.</i>)
Whimbril Curlew	<i>Numenius pheopus</i> , (<i>Lath.</i>)
Sandpiper, (<i>Totanus</i> , <i>Bechst.</i>)	
Dusky Sandpiper	<i>Totanus fuscus</i> , (<i>Leisl.</i>)
Redshank Sandpiper	<i>Totanus calidris</i> , (<i>Bechst.</i>)
Green Sandpiper	<i>Totanus ochropus</i> , (<i>Tem.</i>)
Wood Sandpiper	<i>Totanus palustris</i> , (<i>W.</i>)
Common Sandpiper	<i>Totanus hippoleucus</i> , (<i>Tem.</i>)
Spotted Sandpiper	<i>Totanus macularius</i> , (<i>Tem.</i>)
Greenshank, (<i>Limicola</i> , <i>Leach.</i>)	
Spotted Greenshank	<i>Limicola grisea</i> , (<i>W.</i>)
Avoset, (<i>Avosetta</i> , <i>Bris.</i>)	
Blackheaded Avoset	<i>Avosetta atricapilla</i> , (<i>W.</i>)
Godwit, (<i>Limosa</i> , <i>Bris.</i>)	
Blacktailed Godwit	<i>Limosa melanura</i> , (<i>Leisl.</i>)
Red Godwit	<i>Limosa rufa</i> , (<i>Bris.</i>)
Longbeak, (<i>Macroramphus</i> , (<i>Leach.</i>)	
Brown Longbeak	<i>Macroramphus griseus</i> , (<i>Leach.</i>)
Woodoc, (<i>Rusticola</i> , <i>Vieil.</i>)	
Common Woodoc	<i>Rusticola migratoria</i> , (<i>W.</i>)
Snipe, (<i>Scolopax</i> , <i>Auct.</i>)	
Solitary Snipe	<i>Scolopax solitaria</i> , (<i>W.</i>)
Chesnut Snipe	<i>Scolopax castanea</i> , (<i>W.</i>)
Common Snipe	<i>Scolopax gallinaria</i> , (<i>Gmel.</i>)
Jack Snipe	<i>Scolopax pusilla</i> , (<i>W.</i>)
Ruff, (<i>Machetes</i> , <i>Cuv.</i>)	
Marsh Ruff	<i>Machetes variabilis</i> , (<i>W.</i>)
Dunlin, (<i>Tringa</i> , <i>Auct.</i>)	
Gray Dunlin	<i>Tringa cinerea</i> , (<i>Tem.</i>)

Buffbreasted Dunlin	<i>Tringa rufescens</i> , (<i>Vieil.</i>)
River Dunlin	<i>Tringa pusilla</i> , (<i>Lath.</i>)
Fuscou Dunlin	<i>Tringa fusca</i> , (<i>Lath.</i>)
Rock Dunlin	<i>Tringa striata</i> , (<i>Flem.</i>)
Purr Dunlin	<i>Tringa variabilis</i> , (<i>Meyer.</i>)
Red Dunlin	<i>Tringa rufus</i> , (<i>W.</i>)
	Falarope, (<i>Phalaropus</i> , <i>Bris.</i>)
Gray Falarope	<i>Phalaropus griseus</i> , (<i>Stev.</i>)
	Lobefoot, (<i>Lobipes</i> , <i>Cuv.</i>)
Red Lobefoot	<i>Lobipes hyperborea</i> , (<i>Cuv.</i>)

FAMILY IV., RAIL FAMILY,—(*RALLIDÆ*)

	Rail, (<i>Rallus</i> , <i>Auct.</i>)
Velvet Rail	<i>Rallus serica</i> , (<i>W.</i>)
	Crake, (<i>Crex</i> , <i>Bechst.</i>)
Corn Crake	<i>Crex pratensis</i> , (<i>Bechst.</i>)
Spotted Crake	<i>Crex porzana</i> , (<i>Bechst.</i>)
Olivaceous Crake	<i>Crex olivaria</i> , (<i>W.</i>)
	Zapern, (<i>Zapornia</i> , <i>Leach.</i>)
Marsh Zapern	<i>Zapornia pusilla</i> , (<i>Stev.</i>)
	Gallinule, (<i>Gallinula</i> , <i>Will.</i>)
Common Gallinule	<i>Gallinula chloropus</i> , (<i>Will.</i>)
	Coot, (<i>Fulica</i> , <i>Lin.</i>)
Common Coot	<i>Fulica atra</i> , (<i>Lin.</i>)

FAMILY V., PLOVER FAMILY,—(*PLUVIALIDÆ*)

	Oystercatcher, (<i>Ostralega</i> , <i>Bris.</i>)
Pied Oystercatcher	<i>Ostralega maculosa</i> , (<i>W.</i>)
	Turnstone, (<i>Strepsilas</i> , <i>Illig.</i>)
Collared Turnstone	<i>Strepsilas collaris</i> , (<i>Tém.</i>)
	Sanderling, (<i>Arenaria</i> , <i>Bechst.</i>)
Common Sanderling	<i>Arenaria grisea</i> , (<i>W.</i>)
	Pratincol, (<i>Glareola</i> , <i>Bris.</i>)
Collared Pratincol	<i>Glareola torquata</i> , (<i>Meyer.</i>)
	Swiftfoot, (<i>Cursorius</i> , <i>Lath.</i>)
Creamcolored Swiftfoot	<i>Cursorius isabellinus</i> , (<i>Meyer.</i>)
	Lapwing, (<i>Vanellus</i> , <i>Will.</i>)
Peewit Lapwing	<i>Vanellus capella</i> , (<i>Will.</i>)
	Squatarol, (<i>Squatarolla</i> , <i>Cuv.</i>)
Gray Squatarol	<i>Squatarola cinerea</i> , (<i>Cuv.</i>)
	Plover, (<i>Pluvialis</i> , <i>Will.</i>)
Golden Plover	<i>Pluvialis viridis</i> , (<i>Will.</i>)
Dottrel Plover	<i>Pluvialis morinellus</i> , (<i>W.</i>)

Ring Plover	<i>Pluvialis torquata</i> , (<i>Bris.</i>)
Shingle Plover	<i>Pluvialis littoralis</i> , (<i>W.</i>)
Little Plover	<i>Pluvialis pusillus</i> , (<i>W.</i>)
Stilt or Longshank	(<i>Himantopus</i> , <i>Mey.</i>)
Blackwinged Longshank	<i>Himantopus melanopterus</i> , (<i>Mey.</i>)
Thicknee	(<i>Œdicnemus</i> , <i>Tem.</i>)
Stone Thicknee	<i>Œdicnemus crepitans</i> , (<i>Tem.</i>)

ORDER V.

SWIMMERS.—NATATORES.

FAMILY I., DUCK FAMILY,—(ANATIDÆ.)

Goose Section,—(*Anserinæ.*)Goose, (*Anser*, *Antiq.*)

Graylag Goose	<i>Anser palustris</i> , (<i>Flem.</i>)
Bean Goose	<i>Anser segetum</i> , (<i>Steph.</i>)
Whitefronted Goose	<i>Anser albifrons</i> , (<i>W.</i>)

Bernicle, (*Bernicla*, *Will.*)

Whitewinged Bernicle	<i>Bernicla erithropus</i> , (<i>Stev.</i>)
Brent Bernicle	<i>Bernicla brenta</i> , (<i>Stev.</i>)
Redbreasted Bernicle	<i>Bernicla rufficollis</i> , (<i>Stev.</i>)

Swan Section,—(*Cygninæ.*)Swan, (*Cygnus*, *Antiq.*)

Whistling Swan	<i>Cygnus clangor</i> , (<i>W.</i>)
Pressbilled Swan	<i>Cygnus pusillus</i> , (<i>W.</i>)

Duck Section,—(*Anatinæ.*)Sheldrake, (*Tadorna*, *Flem.*)

Greenheaded Sheldrake	<i>Tadorna vulpina</i> , (<i>W.</i>)
Ruddy Sheldrake	<i>Tadorna rutila</i> , (<i>Stev.</i>)

Shoveller, (*Spathulea*, *Flem.*)

Bluewinged Shoveller	<i>Spathulea clypeata</i> , (<i>Flem.</i>)
----------------------	--

Gadwel, (*Chaulodius*, *Sw.*)

Dusky Gadwel	<i>Chaulodius strepera</i> , (<i>Sw.</i>)
--------------	---

Duck, (*Anas*, *Antiq.*)

Ring Duck	<i>Anas boschas</i> , (<i>Lin.</i>)
-----------	---------------------------------------

Pintail, (*Dafila*, *Leach.*)

Speckled Pintail	<i>Dafila epilobium</i> , (<i>W.</i>)
------------------	---

Teal, (*Crecca*, *Antiq.*)

Common Teal	<i>Crecca palustris</i> , (<i>W.</i>)
Gargany Teal	<i>Crecca æstiva</i> , (<i>W.</i>)
Bimaculated Teal	<i>Crecca glocitans</i> , (<i>W.</i>)

Wigeon, (*Mareca*, *Stev.*)

Whistling Wigeon	<i>Mareca fistularis</i> , (<i>Stev.</i>)
------------------	---

*Pochard Section,—(Fuligininæ.)*Scoter (*Oidemia*, *Stev.*)

Black Scoter	<i>Oidemia nigra</i> , (<i>Flem.</i>)
Velvet Scoter	<i>Oidemia fusca</i> , (<i>Flem.</i>)
Surf Scoter	<i>Oidemia perspicillata</i> , (<i>Flem.</i>)

Eider (*Somateria*, *Leach.*)

Downy Eider	<i>Somateria mollissima</i> , (<i>Leach.</i>)
King Eider	<i>Somateria spectabilis</i> , (<i>Leach.</i>)

Pochard, (*Fuligula*, *Leach.*)

Redheaded Pochard	<i>Fuligula ferina</i> , (<i>Stev.</i>)
Rufous Pochard	<i>Fuligula rufina</i> , (<i>Stev.</i>)
Olive Pochard	<i>Fuligula nyroca</i> , (<i>Stev.</i>)
Scaup Pochard	<i>Fuligula marila</i> , (<i>Stev.</i>)
Tufted Pochard	<i>Fuligula cristata</i> , (<i>Stev.</i>)
Western Pochard	<i>Fuligula dispar</i> , (<i>Stev.</i>)

Hareld, (*Harelda*, *Leach.*)

Whiteheaded Hareld	<i>Harelda glacialis</i> , (<i>Leach.</i>)
--------------------	--

Garrot, (*Clangula*, *Flem.*)

Goldeneyed Garrot	<i>Clangula bimaculata</i> , (<i>W.</i>)
Harlequin Garrot	<i>Clangula histrionica</i> , (<i>Leach.</i>)

*Merganser Section,—(Merginæ.)*Merganser (*Mergus*.)

Common Merganser	<i>Mergus variabilis</i> , (<i>W.</i>)
Redbreasted Merganser	<i>Mergus serrator</i> , (<i>Lin.</i>)
Hooded Merganser	<i>Mergus cucullatus</i> , (<i>Lin.</i>)
Pied Merganser	<i>Mergus albellus</i> , (<i>Lin.</i>)

FAMILY II., DIVER FAMILY,—(COLIMBIDÆ.)

Grebe, (*Podiceps*, *Lath.*)

Rednecked Grebe	<i>Podiceps rubicollis</i> , (<i>Lath.</i>)
Tippet Grebe	<i>Podiceps cinereus</i> , (<i>W.</i>)
Dusky Grebe	<i>Podiceps obscurus</i> , (<i>Lath.</i>)
Eared Grebe	<i>Podiceps auritus</i> , (<i>Lath.</i>)
River Grebe	<i>Podiceps fluviatilis</i> , (<i>W.</i>)

Diver, (*Colimbus*, *Lath.*)

Northern Diver	<i>Colimbus glacialis</i> , (<i>Lin.</i>)
Blackthroated Diver	<i>Colimbus arcticus</i> , (<i>Lin.</i>)
Redthroated Diver	<i>Colimbus septentrionalis</i> , (<i>Lin.</i>)

FAMILY III., AUK FAMILY,—(ALCADÆ.)

Guillemot, (*Uria*, *Bris.*)

Foolish Guillemot	<i>Uria atrata</i> , (<i>W.</i>)
Black Guillemot	<i>Uria lacteola</i> , (<i>Lath.</i>)

	Rotch, (<i>Mergulus</i> , <i>Will.</i>)
Velvet Rotch	<i>Mergulus melanoleucos</i> , (<i>Ray.</i>)
	Auk, (<i>Alca</i> , <i>Lin.</i>)
Penguin Auk	<i>Alca impennis</i> , (<i>Lin.</i>)
Razorbilled Auk	<i>Alca clupea</i> , (<i>W.</i>)
	Puffin, (<i>Puffinus</i> , <i>Will.</i>)
Common Puffin	<i>Puffinus flavirostris</i> , (<i>W.</i>)

FAMILY IV., PELICAN FAMILY,—(PELICANIDÆ.)

	Cormorant, (<i>Cormoranus</i> , <i>Auct.</i>)
Black Cormorant	<i>Cormoranus carbo</i> , (<i>W.</i>)
Green Cormorant	<i>Cormoranus viridis</i> , (<i>W.</i>)
	Gannet, (<i>Sula</i> , <i>Bris.</i>)
Solan Gannet	<i>Sula bassana</i> , (<i>Bris.</i>)

FAMILY V., GULL FAMILY,—(LARIDÆ.)

	Tern, (<i>Terna</i> , <i>Lin.</i>)
Caspian Tern	<i>Terna caspia</i> , (<i>Pall.</i>)
Sandwich Tern	<i>Terna cantiaca</i> , (<i>Gmel.</i>)
Common Tern	<i>Terna cinerea</i> , (<i>W.</i>)
Roseate Tern	<i>Terna elegans</i> , (<i>W.</i>)
Arctic Tern	<i>Terna arctica</i> , (<i>Tem.</i>)
Hooded Tern	<i>Terna pusilla</i> , (<i>W.</i>)
	Viraly, (<i>Viralva</i> , <i>Leach.</i>)
Black Viraly	<i>Viralva nigra</i> , (<i>Leach.</i>)
Marsh Viraly	<i>Viralva cinerea</i> , (<i>W.</i>)
	Tarroc, (<i>Gavia</i> , <i>Bris.</i>)
Black Tarroc	<i>Gavia fusca</i> , (<i>Bris.</i>)
	Gull, (<i>Larus</i> , <i>Lin.</i>)
Little Gull	<i>Larus atricilla</i> , (<i>Gmel.</i>)
Blackheaded Gull	<i>Larus ridibundus</i> , (<i>Lin.</i>)
Winter Gull	<i>Larus canus</i> , (<i>Lin.</i>)
Kittiwake Gull	<i>Larus rissa</i> , (<i>Lin.</i>)
Ivory Gull	<i>Larus eburneus</i> , (<i>Gmel.</i>)
Glaucus Gull	<i>Larus glaucus</i> , (<i>Brun.</i>)
Iceland Gull	<i>Larus islandicus</i> , (<i>Edmonst.</i>)
Herring Gull	<i>Larus argentatus</i> , (<i>Brun.</i>)
Blackbacked Gull	<i>Larus niger</i> , (<i>Bris.</i>)
Fuscus Gull	<i>Larus fuscus</i> , (<i>Lin.</i>)
	Zeme, (<i>Zemia</i> , <i>Leach.</i>)
Collared Zeme	<i>Zemia collaris</i> , (<i>W.</i>)
	Skua, (<i>Lestris</i> , <i>Tem.</i>)
Dashing Skua	<i>Lestris cataractes</i> , (<i>Tem.</i>)

Pomarine Skua	<i>Lestris pomarinus</i> , (<i>Tem.</i>)
Arctic Skua	<i>Lestris parasiticus</i> , (<i>Tem.</i>)
	Fulmar, (<i>Fulmarus</i> , <i>Stev.</i>)
Northern Fulmar	<i>Fulmarus glacialis</i> , (<i>Stev.</i>)
	Shearwater, (<i>Procellaria</i> , <i>Lin.</i>)
Cinereous Shearwater	<i>Procellaria cinerea</i> , (<i>Gmel.</i>)
Manks Shearwater	<i>Procellaria grisea</i> , (<i>W.</i>)
Sooty Shearwater	<i>Procellaria fuliginosa</i> , (<i>Lin.</i>)
	Petrel, (<i>Thalassidroma</i> , <i>Vig.</i>)
Storm Petrel	<i>Thalassidroma pelagica</i> , (<i>Vig.</i>)
Forktailed Petrel	<i>Thalassidroma furcata</i> , (<i>W.</i>)

BIRDS NOT STRICTLY BRITISH.

ORDER II.

PERCHERS.—INSESSORES.

	Finch, (<i>Fringilla</i> .)
Painted Finch	<i>Fringilla ciris</i>
Waxbilled Finch	<i>Fringilla astrilda</i>
Rice Finch	<i>Fringilla oricivora</i>
Amadivat Finch	<i>Fringilla amandava</i>
Canary Finch	<i>Fringilla canaria</i>
	Grosbeak, (<i>Coccothraustes</i> .)
Cardinal Grosbeak	<i>Coccothraustes cardinalis</i>
Blue Grosbeak	<i>Coccothraustes cærulea</i>
	Crossbill, (<i>Crucirostra</i> .)
Whitewinged Crossbill	<i>Crucirostra leucoptera</i>

TUCAN FAMILY,—(*TUCANIDÆ*.)

	Tucan, (<i>Tucana</i> , <i>Bris.</i>)
Yellowbreasted Tucan	<i>Tucana flavifrons</i>
Preacher Tucan	<i>Tucana pictata</i>
Brazilian Tucan	<i>Tucana piscivorus</i>

PARROT FAMILY,—(*PSITTACIDÆ*.)

	Macaw, (<i>Macao</i> .)
Blue Macaw	<i>Macao splendidus</i>
	Coccatoo, (<i>Ptilotofus</i> .)
White Coccatoo	<i>Ptilotofus flavicristatus</i>
	Parrot, (<i>Psittacus</i> .)
Gray Parrot	<i>Psittacus erithacus</i>

	Lory, (Lorius.)
Garrulous Lory	Lorius garulus
	Paroket, (Petacula.)
Bluecapt Paroket	Petacula canicularia
	Grakle, (Gracula.)
Minor Grackle	Gracula religiosa

CUCOO FAMILY,—(CUCULIDÆ.)

American Grayling	Coccyzus Americanus
-------------------	---------------------

ORDER IH.

SCRATCHERS.—RASORES.

PAVO FAMILY,—(PAVONIDÆ.)

Common Pavo	Pavo cæruleus
Javanese Pavo	Pavo muticus
	Argus, (Argus.)
Russet Argus	Argus giganteus
	Fowl, (Gallus.)
Common Fowl	Gallus variabilis
Gigantic Fowl*	Gallus giganteus
Bantam Fowl	Gallus pusillus
Featherfooted Fowl	Gallus plumipes
	Pheasant (Phasianus.)
Ringnecked Pheasant	Phasianus torquatus
Golden Pheasant	Phasianus pictus
Silvery Pheasant	Phasianus argentatus
	Pintado, (Numida.)
Pearled Pintado	Numida punctata
	Turkey, (Meleagris.)
Common Turkey	Meleagris silvestris

PIGEON FAMILY,—(COLUMBIDÆ.)

	Palumb, (Palumbus.)
Tambourine Palumb	Palumb timpanistria
Coppercolored Palumb	Palumbus martinica
Whitebellied Palumb	Palumbus rufaxilla
	Fancrest, (Lophyrus.)
Blue Fancrest	Lophyrus cæruleus

* I have a fine specimen of the Gigantic Fowl in my collection. I kept it among a flock of poultry, with whom it lived on the best terms imaginable; but it was one day found drowned in a pond, into which it was supposed to have been driven by a quarrelsome pair of Pintados.

	Colin, (Ortix.)
Virginian Colin	Ortix borealis.

ORDER V.

SWIMMERS.—NATATORES.

DUCK FAMILY,—(ANATIDÆ.)

Canada Goose	Anser canadensis
Cape Goose	Anser capensis
	Swan, (Cignus.)
Mute Swan	Cignus olor
	Carin, (Carina.)
Musk Carin	Carina moschata
	Woodard, (Dendronessa.)
Tufted Woodard	Dendronessa sponsa
	Gambo, (Gambo.)
Spurwinged Gambo	Gambo galaria

PELICAN FAMILY,—(PELICANIDÆ.)

White Pelican	Pelecanus onocrotalus
	Cormorant, (Cormoranus.)
Crested Cormorant	Cormoranus cristatus

GULL FAMILY,—(LARIDÆ.)

	Skua, (Lestris.)
Richardson Skua	Lestris obscurus
	Petrel, (Thalassidroma.)
Surf Petrel	Thalassidroma wilsonia.

In the foregoing list I have strictly attended to the rule laid down in the twenty-sixth volume of *The Mirror*, page 69: "Each genus should have an English name peculiar to itself." It is not essential that the generic name should have any meaning; perhaps, indeed, it is preferable that it should not. Thus, Abern or Abarn (*Neofron*), Fauvet (*Ficedula*), Snipe (*Scolopax*), Duck (*Anas*), &c., have no meaning; but they answer their purpose as well as, and, perhaps, better than, the following names, which have a meaning:—Shearwater (*Procellaria*), Diver (*Colimbus*), Creeper (*Certhia*), Longbeak (*Macroramphus*), &c. With regard to specific names, I have avoided, as much as possible, taking them from the

country in which a bird is discovered. Such names can only be given, with propriety, when a bird is found *exclusively* in a country, not inhabited by another of the same genus. Thus, the Red Ptarmigan (*Lagopus Scoticus*, LEACH), is, I believe, found only in Britain; but then, other birds of the genus are, also, found in the same island: thus the term "British" and "*Britannicus*," to which it would otherwise be entitled, is inapplicable. The practice of giving the names of persons has, also, been discountenanced. "In science, the practice of distinguishing *persons* rather than *facts* ought to be discarded," says Mr. Jennings, and I fully concur in the remark. "Common" and "*vulgaris*" are, also, objectionable specific titles; for a bird which is common in one country may be very rare, and, perhaps, not found at all, in another. "Great" (*magnus*), and "little" (*parvus*), and "greater" (*major*), and "lesser" (*minor*), are, also, objectionable; for another species may be discovered which is yet greater, or smaller, than that to which the epithet is applied. Such generic names as *Philomeloides*, *Meruloides*, *Milvulus*, *Laniellus*, should, also, be avoided, as implying a relationship to those genera from which the names are derived, namely, *Philomela*, *Merula*, *Milvus*, and *Lanius*. Such compounds as *Haliaetos*, *Chrysaetos*, *Gypaetos*, *Montifringilla*, *Nycticorax*, are inadmissible; for a generic name should not be a compound of a generic and specific (as those are), but a generic only.

The specific name should not be founded on a generic character. We frequently see "*Loxia curvirostra*:" the term *crucirostra*, however, applies equally to all the Crossbills (*Crucirostræ*), and has been very properly used as a generic name by Wilson, Cuvier, and others. We frequently, also, see "Common Avoset (*Recurvirostra avosetta*)," "Black Cormorant (*Phalacrocorax cormoranus*)," &c.; this is making the English generic name into the specific one in Latin: it would be preferable to write *Avosetta atricapilla*, and *Cormoranus carbo*. Authors, likewise, frequently give generic and specific names, which have the same meaning conveyed in different languages; for example, *Erythaca rubecula*, *Caryocatactes nucifraga*, *Phœnicura ruticilla*: it would be acting more in accordance with reason to name these birds thus,—*Rubecula familiaris*, *Nucifraga punctata*, *Ruticilla luscinia*. Mr. Blyth says: "For reasons already

mentioned, I prefer the designation *Rubecula*, and have termed the Robin Redbreast, *Rubecula familiaris*, a name to which none can object." This title is singularly appropriate, as applied to our little friend "with bosom red," besides being far more euphonious than the harsh name "*Erythaca*." Greek names should be avoided as much as possible, it being desirable to draw the scientific nomenclature from one source.

Selby says he adopts *Cataractes* in preference to *Lestris*, on account of the priority of the former; *Cataractes* having been given by Willughby, and *Lestris* by Illiger and Temminck. Then why has he not adopted *Pluvialis* instead of *Charadrius*, and *Ficedula* instead of *Curruca*? Those names have the claim of priority and euphony too. With regard to the Fauvets, Blyth remarks: "The best and most appropriate name that has hitherto been applied to the Fauvettes, is the term *Ficedula*, of Aldrovand. The appellation *Curruca* (derived from the Latin word *curro*, to run), cannot, with propriety, be affixed to any genus of warblers, inasmuch as they all move forward by hopping; it would, therefore, I think, be better to reject altogether the term *Curruca*, as objectionable and inappropriate, and to call the genus *Ficedula*." *Curruca* I have applied to the Annets, as these birds may be appropriately so called. There is only one British species, the Alpine Annet (*Curruca collaris*, W.). "Wild" and *ferus* can of course, never be made a specific name, for domestication does not change the species of a bird. Mr. Neville Wood, in his accurate account of the Brake Nightingale, (see *Analyst*, vol. ii, p. 394), has committed this error: he calls the Ring Duck (*Anas boschas*, Lin.), the "Wild Duck." There are, however, many species of *wild* Duck: if he had intended to specify the wild bird in contradistinction to the tame, he should have said the "wild Ring Duck (*Anas boschas*, var. *ferus*);" or, for the domesticated variety, the "tame Ring Duck (*Anas boschas*, var. *domestica*)." When it is necessary to mention the birds often, the specific term "Ring," or whatever else it is, may, of course, be omitted, but "wild" and "tame" can, in no case, be admitted as specific names.

A new mode of designating birds is now practised by some Ornithologists: for instance, suppose they wanted to designate the

White Ptarmigan (*Lagopus mutus*), they would write White (Ptarmigan) Grouse, (*Tetrao (Lagopus) mutus*); the Snow Longspur (*Plectrophanes nivalis*), they would call the Snow (Longspur) Bunting, (*Emberiza (Plectrophanes) nivalis*); the Cinereous Ossifrage (*Ossifraga cinerea*), they would call Cinereous (Ossifrage) Eagle, (*Aquila (Ossifraga) cinerea*); the Whiteheaded Abern (*Neofron Alpina*), they would call the Whiteheaded (Abern) Vulture, (*Vultur (Neofron) alpina*). However pretty this may be in theory, it would be found a very bungling method for *practical* purposes. These Ornithologists contend that, besides the generic and specific name now universally given to each bird, there should also be a *sub-generic* appellation, which they place, as above, between parenthesis. I cannot, however, see a single practical advantage to be derived from these "sub-genera," however they may serve to amuse the systematist in his closet. They entirely destroy the beautiful simplicity of the binary system of Linnæus, and, so far from being a help to, appear to me calculated to retard, the student. They will, doubtless, be found as useless, for all practical purposes, as the sections of Temminck.

If I have not rendered the foregoing remarks perfectly clear, I shall be most happy to give further explanations, as discussion frequently elicits truth. I shall be equally ready to attend to suggestions respecting the names of any birds, as I am aware that several of the *specific* ones are objectionable, and it is not to individual things, but to broad principles, that I am attached.

S. D. W.

Derbyshire, Nov. 9, 1835.

ON THE INFLUENCE OF COMETS.

"Canst thou the skies' benevolence restrain,
 And cause the Pleiades to shine in vain?
 Or, when Orion sparkles from his sphere,
 Thaw the cold season, and unbind the year?
 Bid Mazzaroth his destined station know,
 And teach the bright Arcturus where to glow?
 Mine is the night, with all her stars; I pour
 Myriads, and myriads I reserve in store."—YOUNG.

A CONSIDERABLE proportion of the public may, perhaps, think that this is a subject which might safely be left in the hands of Mr. Francis Moore;—a sentiment in which that personage, for a very different reason, may, probably, acquiesce. It may, however, happen that a popular opinion, exploded and derided by the scientific, and cherished by those who make an unworthy gain of the superstitious terrors of mankind, may be established upon a more solid foundation than either party are aware of. What!—the reader will exclaim, are we then to have a defence of the contemptible follies of judicial astrology?—by no means; but it does not follow that because Comets and other celestial bodies have no astrological influence, they have, therefore, no influence at all. The character of science in the present day, is somewhat dogmatical and assuming; we are rather in danger of dictating to Omnipotence the laws and rules by which alone the world must be governed; and we are excessively unwilling to believe that there can be anything, either in heaven or earth, that is not only not dreamt of, but not ascertained and fathomed to the uttermost, in our philosophy. This tendency to deny what we cannot demonstrate,—to disbelieve what we cannot comprehend, is less characteristic of the spirit of true knowledge than of a self-complacency which is the natural inmate of the heart of man, springing from ignorance alike of himself and of his Maker. The bold assertion that Comets have not, and cannot possibly have, any influence whatever upon the earth, appears to be, in some measure, the fruit of this "philosophic pride;" and though more justifiable, yet little more unquestionable, than the confident predictions of those who pretend to penetrate into futurity, from the aspect of the heavens. In answer to this assertion, my object is not to shew

what kind of influence Comets may possess, nor even that they do absolutely possess an influence, but simply to point out that, as we have no proof to the contrary, so we have some inducement to suspect its existence.

It has been always a commonly received opinion, whose origin may be plainly traced in the melancholy anticipations of this state of mortality, that a Comet is the unfailing precursor of calamity and trouble. Those who could not perceive the mode of the connection did not fail to acknowledge its certainty; but some there were whose powers of imagination carried them much farther, and enabled them to comprehend, with the most satisfactory distinctness, the whole progress of the mischief. So curious a specimen of the scientific discoveries of the followers of Aristotle, in the sixteenth and seventeenth centuries, has been given, by Pingré, from Fortunius Licetus, that I shall here transcribe the substance of them.

The light and heat of a Comet being incapable of producing the effects attributed to it, its influence must be derived from the matter of which it is composed.

1. This matter consists of terrestrial exhalations, not such as are continually evaporated from the surface, but derived from the interior; such as issue from volcanos, hot, dry, sulphureous, and bituminous. When very abundant, their efforts to escape are the cause of earthquakes, tempests, and hurricanes.

2. Having escaped, they heat and dry the air in their passage, thus producing the most powerful effects upon men in general, especially those of a warm and melancholic temperament; hence proceed anger, hatred, sedition, conspiracy, war, sickness, and epidemic diseases.

3. These materials having risen to form a Comet in the upper regions of the air, cease to affect us otherwise than by continually drawing up fresh supplies from the earth.

4. Of these additional exhalations, the heavier particles, less lofty in their ascent, corrupt the air we breathe; the lighter seize upon, volatilize, and dissipate the humidity of the atmosphere, thus producing winds and drought: the latter is the cause of famine and of atrabiliary complaints, to which princes, according to Aristotle, being remarkably subject, must, of course, be most affected by the

influence of a comet. The humid particles are, however, sometimes so abundant, as to mollify the exhalations, and deprive the comet of its malignity, which is the reason why they are not constantly accompanied by some disaster.

5. The comet is on fire ; and being composed, according to Aristotle, of earth and air, the earth is consumed, and the air is changed into a very volatile fire, which ascends and hurts nobody.

6. The earthy part is reduced to ashes, which fall to the ground in the form of motes, reducing the air to still greater dryness : they may employ some time in their descent, whence the famines, diseases, and wars, may not follow immediately upon the Comet's appearance ; but the longer their effects are deferred, the more terrible they will be.

Licetus attributes the wars and deaths of princes, under such circumstances, to their melancholy temperament ;* others think that their delicate constitution exposes them more to the Comet's influence ; and others, that the volatile articles which they are in the habit of consuming convey to them, in particular, a greater degree of the poison which they imbibe from the infected air.†

The reader need not be alarmed at the prospect of my undertaking the defence of this most ingenious, and connected, and satisfactory theory, which is perfectly capable of resting upon its own merits ; although it has the advantage over some of the notions of the astrologers, in assigning a physical cause for the results which are stated to attend upon a Comet. I shall not even assume, as a fact, that Comets are accompanied by any perceptible effects whatever ; but I cannot help looking upon it as probable that all the bodies in the system may be connected by a common bond of mutual influence, and that upon this combination of the whole may depend the welfare of every individual portion ; and that the wisdom of the Creator has not only made nothing in vain as far as itself is concerned, but even as regards the system of which it forms a component part. That this is the case, in instances of greater proximity, is evident to observation:

* " Eraste dit qu'il seroit à souhaiter que la melancholie et la bile des princes fût la vraie cause des guerres: quelques gros de rhubarbe épargneroi-ent bien de sang."

† Pingré, *Cométographie*, i., 75, et seqq.

the close connection and mutual dependance of all classes of animate and inanimate beings upon the surface of the earth, is too familiar to require illustration : and may we not admit a similar interchange of necessary and kindly influences among the various bodies which are grouped in the same system, or even dispersed throughout space ? But they are not in contact—the objector may assert. Neither is the magnet in contact with the needle which it attracts, nor the moon with the ocean which it rules, nor the sun with the earth which it vivifies and cheers. Even were we ignorant of any influences which could be transmitted through the immense distances around us, what is distance in the hand of the Creator, who “ stretcheth out the heavens as a curtain, and spreadeth them out as a tent to dwell in ? ”* But while we perceive that light, and heat, and gravitation, are continually penetrating through spaces of wonderful extent, and the effect of the former, in particular, is sensible at distances that are almost beyond all assignable limits, how can we venture to assert, in positive terms, that no other influence, at present unknown to us, is capable of traversing the same extension, and operating as independently of contact or proximity ?—The transmission of light and heat from the sun, was obvious to the earliest inhabitants of the earth ; but century after century passed away, and the universal principle, which governs alike the fall of a stone, and the revolution of the planetary globes, continued shrouded in impenetrable obscurity. And is it improbable that many more such discoveries may remain to be made ? and that many more principles will for ever remain beyond the reach of discovery ? Does it not approach to presumption to suppose that we have entered into the adytum of nature, the very holy of holies, if I may so speak, of the great temple of the world ?

“ Tantane vos generis tenuit fiducia vestri ? ”†

Such is but too frequently the disadvantage attendant upon scientific research ; it leads us to forget our profound ignorance : and in our eagerness to possess ourselves of the secrets of the Almighty, we may sometimes expose ourselves to the rebuke which he gave to his

* Isaiah, xl., 22.

† Æneid, i., 136.

erring servant,—“ Who is this that darkeneth counsel by words without knowledge?”* Can we comprehend the principle of vitality?—can we explain the development of the tree from the seed?—the bird from the egg?—can we trace the subtle and inscrutable processes that take place, as in the most exquisite laboratory, in every leaf and flower, and by such insignificant means supply all the animal kingdom with vital air and sustenance?—or have we even the slightest conception of that profound mystery, the connection of mind and matter, and their mutual influence,—the secrets of life and death, of dissolution and reproduction? The proudest intellect will be humbled in the dust in the attempt to grasp even one of the least of the processes which are every moment going on around us, and by which we live and move: and so long as these remain unexplained, the language of dogmatical assertion is equally unsuitable and unavailing; and it is more fitting to confess that what we know is nothing, in comparison of what we know not. But since, from those operations which we are able, in some measure, to comprehend, we have deduced with certainty the existence of their proximate causes; since, from the revolution of the planets, we have inferred the force of gravity,—from the polarity of the needle, that of magnetism,—from the decomposition and re-combination of bodies, that of chemical affinity, may we not also admit the possibility that such unknown processes as have been alluded to may be the result of equally unknown, but most energetic, influences, and that these influences may depend upon the arrangement and adaptation of all the parts of the system to which we belong, or of the universe itself? and is it not within the bounds of credibility that every individual body may be contributing, in its appointed station, to the maintenance and welfare of the whole? We have no reason to suspect the immediate presence of the Deity among the inanimate works of his hands, since the time when the laws of nature were suspended, to bear testimony to the truth of revelation. He warms the globe—but it is through his instrument the sun; he visiteth the earth and blesseth it—but not without the intervention of the chemical processes of evaporation and precipitation: and even so we may, per-

* Job, xxxviii., 2.

haps, imagine that, in other more recondite operations, he may, also, work by intermediate principles, such as his unsearchable wisdom has ordained for his own glory, and his unbounded beneficence directs to the good of his creatures.

The argument then reduces itself to this :—that since the number of effects which we are able to refer to known principles is very far from comprising the whole of the operations of nature, we may very fairly infer, from effects hitherto unexplained, the existence of principles as yet undiscovered : and since, in the former instance, several of the most dominant agents affect us at an immense distance, there is no antecedent improbability that such may be the case in the latter, and that the heavenly bodies may mutually communicate to each other many very powerful and essential influences, among which those of Comets, from their magnitude, and the peculiar distribution of their orbits, may be ordained to act a very important part ; though, at the same time, the exact nature of these influences is, at present, entirely beyond our comprehension.

These reflections, though they may not be opposed to any of the rules of legitimate induction, might, notwithstanding, be regarded as little more than a sketch of a philosophical romance, if they were entirely unsupported by the evidence of facts. To some persons this will appear to be the case ; and the falsely denominated march of intellect—which, at best, is but the march of information, and very frequently of dogmatical presumption—is sufficiently opposed to the reception of any statement which appears to militate against its infallibility and perfection. To allude to the opinion of Lunar Influence may subject me to the censure of an elegant writer, who has asserted that “such prejudices, if they yet linger in some places among the shattered remnants of that ignorance and superstition which once overspread Europe, are now rapidly disappearing before the advancement of science : they resemble the shadows of the night, that flit, for a while, amid ruins, though the general darkness has passed away ; but which, ere long, also vanish, by the progressive and brightening influence of the sun.”* Nay, there may possibly not be wanting, among the sciolists of the

* Milne's *Essay On Comets*, p. 180.

age, some who may suspect that, if there is any such influence, its effects are to be traced in the brains of those who defend it. But as it is sufficiently evident that, if the principles, which I have alluded to, exist, by far the greater portion of their results may, probably, be referred to the companion of our orbit, and the great luminary which occupies its centre, so I conceive that we are not destitute of some evidence which tends to establish the fact.

We may easily perceive that a satellite would not have been granted to us, except for some great and worthy end; but if we proceed to enquire what this end may be, we shall not so easily discover it. That it was not principally intended to reflect light upon us, is plain from the little inconvenience we experience in its absence. The quantity of heat we receive from it is known to be insensible. The elevation of the tides can hardly be thought a primary end of its creation, because they would still have existed, though in a minor degree, from the attraction of the sun, and their absence in the smaller seas proves that they are not so indispensable as has sometimes been supposed.* What, then, is the great design of the moon? May we not suppose that its presence is essential to the functions of organized bodies, the operations of animal and vegetable life, and the variations of the atmosphere? Such an hypothesis might not appear improbable, even *a priori*, to those who are not deterred from the exercise of their understandings, by the popular outcry against every thing that savours of antiquated opinion and feeling: but when we find this antecedent probability confirmed by the unanimous belief, founded upon observation, of a great part of mankind, we cannot surely help feeling that such a supposition ought not rashly to be rejected as mere prejudice or superstition: it is true that it is unsupported by philosophical experiments, but for this plain reason, that such experiments seem never to have been tried.† In Herefordshire, the pre-

* This argument may be analogically applied, with even greater force, to the other planets: it is not probable that the satellites of Saturn can add much light to that reflected by the ring; and neither they, nor the satellites of Jupiter, can raise any considerable tides in the seas (if there are any) in those planets, because their attractions would generally neutralize each other, and maintain the whole mass nearly in equilibrio.

† It is much to be desired that some enterprising and unprejudiced student of nature, would undertake a series of experiments calculated to establish or refute the fact of the lunar influence, and to ascertain its peculiar nature.

servation of apples is thought to depend upon the season of gathering, with regard to the moon; in the western islands of Scotland, the peat dug in the increase of the moon is said to continue moist, and never burns clear, while the contrary is observed of that cut in the decrease; and the earthen dykes thrown up in the latter season alone are found to possess stability.* It is, also, stated that if an animal fresh killed be exposed to the moon's rays, it will, in a few hours, become putrid; while another animal, only a few feet distant, protected from their influence, will not be, in the least, affected; that fruits exposed to moonlight have been known to ripen much more readily; that plants, bleached in the dark, recover their colour from the beams of a full moon; and that, in South America, trees cut at the full of the moon split almost immediately, as if torn asunder by great external force: "all these," it is added, "are remarkable and well-established facts;"† and such, at any rate, is that of the rapid decomposition of fish, in the West Indies, which are taken by moonlight.‡

Several additional instances, of the same kind, might be given with respect to animals and vegetables: it may be said that some of them are not sufficiently ascertained—but it cannot be asserted that they have been disproved; neither will it be so easy to invalidate, as to deny, what is matter of ordinary observation, the lunar influence upon the human constitution.|| But, whatever may be the fate of some of these assertions, the connection between the state of the weather and the changes of the moon is unquestionably verified by the continual experience of those who possess the best opportunities of remarking it: it may easily be discredited by the inhabitants of populous cities, to whom the aspect of the open

* Martin's Description, in *Mechanics' Magazine*, xi., 426.

† *Mechanics' Magazine*, iv., 381.

‡ Many of the same facts have been remarked by Pliny, who elegantly terms the moon "a feminine and soft star;" he attributes to it the liberation of the damps of night, the production of sleep, and the increase and decrease of animal and vegetable substances: he expressly mentions the putrescence of slaughtered beasts, and has given full directions to render its aspect available in the various labours of agriculture.—(1. ii., c. 99, 101., xviii. 32.)

|| The objection which has been triumphantly alleged against the action of the moon upon the human body,—that it has no effect upon the most delicate barometer,—is about as pertinent as it would be to complain that a rain-gauge could not be emptied by a magnet, or a clock set agoing by a dose of calomel.

heavens is "something rich and strange;" the closely-pent artizan and the laborious student are little interested or concerned in the variations of the weather; but they whose prosperity is immediately connected with it, and who look with anxiety and eagerness upon the tokens of the sky, will be the last to treat such an opinion with doubt or ridicule.

An impartial review of the evidence in favour of "the precious things put forth by the moon,"* may lead us to admit that it establishes, at least, a considerable degree of probability: with regard to the solar influence, our certainty arises almost to that of demonstration. At once we perceive that the action of the sun is incalculably more important and universal than can be attributed to its light and heat alone; or, at least, that these emanations—the former especially—must be possessed of properties far more various than have, as yet, been accurately ascertained, in order to produce those wonderful effects in renewing the face of the earth, which so clearly demonstrate the superintendence and bounty of an unfailing Providence. These unknown properties may, in fact, be said to be some of the identical influences of which we are in search; since they may be more philosophically ascribed to emanations, contemporaneous and similar to light—but imperceptible to our organs—than to light itself. We are passing entirely beyond the bounds of certainty, when we attribute to light any other properties except those by which it becomes the medium of vision, and without which its existence would be wholly unknown to us. We immediately perceive the impropriety of ascribing the peculiar effects of heat to the action of light, though they are closely connected, and governed by the same laws; and we should be guilty of nearly the same inaccuracy, in referring the vivifying influences of the sun to his luminous rays. The solar emanations appear to be compounded of many distinct principles, of which we have succeeded in insulating only the luminous, the calorific, the deoxydizing, and, perhaps, the magnetic rays; but it is very possible that a future analysis of the spectrum, conducted by methods hitherto untried, may enable us to detect others, of which we have, at present, no conception: at

* Deuteronomy, xxxiii., 14.

least, the separate existence of an invisible chemical emanation being now established, we may fairly infer the presence of others, which are not the objects of our senses, but whose operations may be alike important and widely extended.

The application of the foregoing reflections to the subject is obvious. The influences, which we have supposed to reside in the sun and moon, may, with equal probability, be conceded, in a smaller degree, to the other celestial bodies; and the peculiarity of the constitution of comets may lead us to imagine that the influence they exert may be dissimilar to that of the other parts of the system.

But here we must pause: observation alone ought to be our guide in our farther advance; and it may be very long before we can distinguish real effects from such mere coincidences as are perpetually mistaken for them. That the latter has been, hitherto, in general, the case, we cannot doubt; though we may not affirm that all the circumstances, which have accompanied the appearance of comets, have been solely of this nature. Warmth, and fertility, and a superior vintage were the effects attributed to the great comet of 1811; but probably upon no sufficient foundation: in these respects, its similarity was remarkable to that very conspicuous one which attended the apotheosis of Julius Cæsar, if we may believe that beautiful apostrophe of Virgil,—

“Ecce, Dionæi processit Cæsaris astrum :
Astrum, quo segetes gauderent frugibus, et quo
Duceret apricis in collibus uva colorem.”—*Eclog.* ix., 47.

“See, Cæsar’s lamp is lighted in the skies :
The star, whose rays the blushing grapes adorn,
And swell the kindly ripening ears of corn.”—*Dryden.*

It is scarcely necessary to add, that a hypothesis of this kind has not the remotest connection with the absurdities of astrology. Both are raised upon the same foundation; and that foundation may be truth: but they who, not content with the existence of an influence, have, without the slightest reason, defined its nature, its quantity, its distribution, and the laws which it obeys, have erected a superstructure which, contrasted with the magnificent dimensions and harmonious proportions of the true theory of nature, has as

incongruous an aspect as a paltry Chinese pagoda beside the solidity and elegance of a towering cathedral.*

A subject of this nature requires to be discussed upon its own merits: the highest authority may not be the safest guide; and those ancient lords of the intellectual reign, whose names we revere, were frequently deficient in that degree of information which is necessary in order to form a correct decision. Yet how can I refer without pride, to the sentiments of Bacon and of Newton in support of the view which I have taken? It was the opinion of the former, that "comets have some power and effect over the gross and mass of things;" while the latter explicitly states his suspicion, that the exhalations of comets are instrumental in restoring the humidity, which he supposes to diminish, upon the surface of the earth, and that from them may proceed the supply of that refined spirit,—the least, but purest part of our air,—which is requisite for the existence of all vitality.† The erroneous nature of this conjecture is immediately apparent; but it is, at the same time, evident that neither of these fathers of science considered a belief in the influence of comets to be an indication of unbridled extravagance, of illiterate prejudice, or of imbecile superstition.

M. Arago has stated, that a comet can act on the earth only in three manners;—by attraction, by its luminous and calorific rays, or by the union of its tail with the atmosphere of the earth. It will be seen that the line of argument which has been taken, reduces his assertion to a mere *petitio principii*. His inferences, however, are well worthy of attention. Having shewn that the results produced by the two former causes would be insensible, he adds, that not only cometary matter may fall into our atmosphere, but

* It is highly gratifying to me, to find that a sentiment remarkably similar was expressed by Tycho Brahe: "Astrologorum vanitatem, inertiam, ignaviam, et sordes plurimum et deridere et detestari est solitus: sic tamen, ut siderum effectus in sublunaribus partem philosophiæ præstantissimam nequaquam negaret: gnarus effectus illos siderum generales, ab eventibus ipsis in rebus humanis individuïs, accuratissimo judicio distinguere."—*Vita, a Gas- sendo*, p. 187.

The prediction of Fromond, (who was no friend to astrology), and Pingré's comment upon it, deserve insertion: "La comète de 1618 a annoncé et doit opérer un grand désastre, la ruine entière de la Philosophie d'Aristote. C'est la seule prédiction, fondée sur les apparitions des comètes, qui ait été bien certainement accomplie."—*Cométographie*, i., 104.

† Milne's Essay, pp. 112, 180.

that this phenomenon is of a nature to occur frequently, and may possibly produce those epidemic diseases which have been attributed to it.* Thus, also, Mr. Herapath has considered the subject: "history furnishes us with numberless instances of the great atmospheric changes which have accompanied or succeeded the apparition of large and notorious comets; and unless we reject altogether its often iterated testimonies, I do not see how we can refuse our assent to influences so manifest, and yet so simple and perfectly philosophical. That comets may produce very sensible effects, in the way alluded to, not only in the meteorological state of the air, but in its salubrity, our best philosophers admit; but these effects must always be concurrent or posterior—never, I apprehend, anterior—to their appearance."†

Without offering any opinion upon the views thus suggested, which, it must be confessed, have been lately placed in a very unfavourable light by Professor Littrow, I may remark that this is a most important and interesting portion of the subject, and totally distinct from that which has formed the object of our reflections: the influence, whose possibility we have been contemplating, would be as independent of proximity or contact, as that of light or gravitation; but that indicated by M. Arago is an action resulting from the real combination of a heterogeneous substance with our atmosphere. That such an union may occur, is indisputable, from the disposition of the paths of comets, the immense extent of their tails, and their feeble gravitation towards their nuclei; and it is highly probable that events of this kind have actually taken place: but whether any effects are thus produced, and what those effects may be, are questions which cannot be determined otherwise than by observation and experience.

THOMAS WILLIAM WEBB.

Tretire, near Ross, Dec. 3, 1835.

* *Mechanics' Magazine*, xviii, 28, 60.

† *Mechanics' Magazine*, xviii. 63.

CURSORY OBSERVATIONS

ON CERTAIN INCONSIDERATE CRITICISMS RESPECTING PAINTING AND SCULPTURE.

BY WILLIAM CAREY.

THERE is no mistake more common, in forming a judgment of fine ideal works of art, or those which are imaginative representations of incidents in general nature, than that of approving or censuring those performances by comparisons which the critics have founded on their own views of particular nature. They set up whatever they have seen and been struck with, in ordinary or familiar life, as a standard for art, every deviation from which they conceive to be a defect in the picture, and a want of judgment or genius in the painter. But, in passing this censure, they overlook the fact that there are various modifications of persons, manners, and accessories, in every rank and degree of society. They also forget that unless the artist had been always, or generally, present with them, he could not have seen those particulars, which they require, or, by any possibility, have painted them. Even if he had been with the censors, there are very few who agree in their views or relish for the same objects, and, in case of such a disagreement, the designer must either exercise his own judgment, or servilely follow that of another contrary to his sentiments.

The misconception to which I have adverted is very prevalent, and I am induced to notice it particularly, because it has proved an obstacle to the progress of taste and patronage, and the best interests of the British school. Unfortunately, it is not confined to individuals of a limited understanding and education, or such as are new to the inspection of painting and sculpture. Very many persons of liberal education, good abilities, and extensive acquirements in other intellectual departments, on visiting the exhibitions of modern art, adopt this erroneous mode of comparison, in judging the performances under their inspection. It is certain that great scholastic attainments alone, even of the highest order, do not constitute a qualification to judge correctly of the productions of the pencil and

chisel, although, combined with an early and intimate access to fine collections, an accomplished scholar possesses important advantages in justly discriminating the beauties and defects of pictures and statues.

Boswell, the enthusiastic admirer and friendly biographer of Dr. Johnson, has admitted that the distinguished subject of his eulogium "*had no taste for painting.*" (vol. iv., p. 310). In the usual acceptation of words, the declaration here quoted amounts, in effect, to this, that "the great literary Colossus" had no liking for pictures, having no acute perception of their beauties, and, from this circumstance, was indifferent to painting, and under-rated its powers. This trait of character having been published by a man of letters, of unimpeached veracity, who, in his own phrase, "had the honour and happiness of his (Dr. J.'s) friendship for upwards of twenty years," it has been received with all the weight of an undisputed truth, corroborated by relative evidence. The opinion of Dr. Johnson, on almost every subject, was, and is, justly held to be of the highest authority, and his known distaste for painting was not calculated to raise that art in the public esteem, or to abate the anti-contemporarian and anti-British prejudices against modern art, which were nearly at their height in his time.

In the years 1824 and 1825, when obtaining materials from the rich fund of Northcote's recollections, for my "*State of the Arts in the United Kingdom,*" I wrote regular notes of his communications, of which I made large use in my "*Varix; important Evidences in favour of British Historical Painting,*" an octavo of 112 pages, which I published in the latter year. In those conversations, we often spoke of Dr. Johnson, as the friend of Reynolds; and Northcote, with marked emphasis, said, "He (Dr. J.) knew nothing of the arts." I enquired what he meant by "knew nothing?" and he replied, "He (the Doctor) did not like to speak on the subject: he never introduced it in my hearing; and whenever it was introduced by others, he remained silent, or, if he spoke of any particular picture, or painting in general, he was wrong in his judgment." This is much to the same effect as Boswell's declaration, that his illustrious friend "had no taste for painting." But it appeared to me, that Northcote's self-love and professional pride had taken offence at what he considered an undue estimate of his art, by one

whom he, otherwise, looked up to and venerated as the most learned character and greatest mind of the age. He thought, and perhaps justly, that if the Author of *The Rambler* had a due perception of the beauties of historical and poetical painting, and of the moral instruction which they convey, and had employed his great powers to awaken the public to a sense of their excellence; the British arts would have been greatly benefited. In this I agreed with him. And he seemed to think, that the known indifference of so eminent an authority, had a considerable tendency to keep the public apathy in countenance. I enquired of him if he had heard a current story, that Dr. Johnson once said, "if a collection of paintings were before him, with their faces turned to the wall, he would not be at the trouble of turning them to look at them?" He said, he had heard it often, but could not say whether it was true or not. There may be some exaggeration in this report, and, after all, it may be destitute of foundation. The important point to which I call attention, is the main fact, that, notwithstanding his wonderful extent of mind and literary pre-eminence, Dr. Johnson had but a slight or inferior opinion of the powers of historical painting, the highest class of the art.

Boswell tells the following story: "When I informed him (Dr. J.) that painting was so far inferior to poetry, that the story, or even emblem, which it communicates must be known, and mentioned, as a natural and laughable instance of this, that a little Miss, on seeing a picture of Justice with the scales, had exclaimed, 'see, there's a woman selling sweetmeats,' he (Dr. J.) replied,—'*Painting, Sir, can illustrate, but not inform.*'" Boswell here introduces himself as *giving, not receiving, information*; a character very unusual with him, when conversing with his illustrious friend: but, probably, he ventured to take that liberty, on the subject, it being one which, from long intimacy, he well knew the Doctor had little studied. That a child, who probably had sweetmeats weighed to her, should, on seeing the scales in the picture, mistake an allegorical or emblematical figure of Justice for a woman selling those dainties, is no way surprising; but that Boswell should cite this solitary instance of a puerile mistake as an argument to prove the inferiority of painting to poetry, is somewhat extraordinary. The

meaning of allegorical and emblematical poetry and painting is very frequently misunderstood by artists, eminent literati, and critical commentators. It is still more surprising, that the great philologer, in his inferior estimate of painting, drew so strange and wide a distinction between *illustrate* and *inform*. So much stress is laid on this distinction by critics, who have derived from thence an inference not very favourable to painting, that I hope to be pardoned the presumption of analyzing it candidly—not with the vanity and folly of expressing a dissent from the most learned authority of his time, but to submit, to the better judgment of the readers, some thoughts in vindication of a noble art from present misconception and prejudice.

In that triumphant proof of his comprehensive powers, his *Dictionary*, we find the following explanations:—

“ILLUSTRATE, *v. n.* [*illustro*, Lat., *illustrer*, Fr.] 1. To brighten with light. 2. To brighten with honour. 3. To *explain*; to *clear*; to *elucidate*.”

“ILLUSTRATION, *n. s.* [*illustration*, Fr.,—from *illustrate*]. Explanation; elucidation; exposition. It is seldom used, in its original signification, for material brightness.”

Now, *how* a painting can illustrate, that is, explain, elucidate, or expound, and *not inform*, is a question which Dr. Johnson, were he living, could best answer. The Latin and French verbs from which illustrate is derived, bear the same signification. It appears to me, the verbal distinction, in Boswell's statement, is not easily reconcilable to reason, or to the direct meaning of the words, illustrate and inform, in Dr. Johnson's pages. Taking his *Dictionary*, the highest philological authority in the English language, for our guide, it warrants an affirmation that painting cannot illustrate without conveying new or additional knowledge, and giving a more striking and splendid view of the story which it represents. But, independent of all verbal distinctions, and apart from those here referred to, what is the fact? The painting of the death of General Wolfe not only illustrates that memorable catastrophe, but it informs the spectator of the mode of his death; it shows that he was not slain in close combat, by the sword or bayonet, but received a mortal wound from a distant gun-shot, and died soon after, in the moment of victory, surrounded by his officers. The uniforms show

that the general and his army are British, and the tattooed Indian warrior tells the country in which the battle was fought. If all this be not information, then I may be allowed to add—take away the American Indian, and the British uniforms; strip off the clothing of the dying general and his officers, and exhibit all present in the same attitudes, in a state of nudity, and the picture would be no illustration; it could not convey any information what battle it referred to, or of what nations the contending armies were composed. Ridiculous as this supposition may appear, it was realized by Barry, who, about the same time, in the pride of his anatomical science, painted a battle of naked warriors, and exhibited it as a representation of the death of General Wolfe. This strange production was looked on to be altogether so deficient in the information which it ought to convey, that it was generally censured and treated with public derision; in consequence of which, the mortified painter never after exhibited any of his works at the Royal Academy.

Mr. Galt has stated that, when West was commencing his painting of the death of General Wolfe, Sir Joshua Reynolds urged him to paint the actors “in the classic costume of antiquity,” being that of Greece or Rome, as most dignified. This reasoning was rather singular from the first president, whose good sense, and fine taste, were prominent features of his mind. But West justly considered, if he were to adopt the advice, his picture would not convey any information of “the time and people” to be represented, and, therefore, would be an untrue story. He said, “I consider myself as undertaking to *tell* this great event to the *eye* of the world; but if, instead of the facts of the transaction, I represent classical fictions, how shall I be understood by posterity?” He, therefore, deeming it his duty to convey correct information by his pencil, followed his own views, and, after the painting was finished, received the approbation of Reynolds. There is no question but the rejected advice far exceeded any justifiable license allowed to painting; for an adherence to propriety of costume, in historical representation, had been long established, as a first principle, in the old schools.

Northcote gave me a different version of this advice, which he said he had received from Reynolds himself; it was that the latter advised West not to undertake a subject which would require him

to paint cocked hats, coats, boots, and all the unpicturesque details of regimental uniforms. This certainly seems more consonant with Sir Joshua's fine taste and sound judgment. But, between the two statements, the reader will decide according to the degree of probability.

There was, also, a positive mistake in Sir Joshua's supposition that West's death of General Wolfe "would produce a revolution in the art," which implied that it was the first battle painted in the modern dress. But, so far, the revolution had been begun long before West was born. Excepting in the ignorant dawn of the arts, artists never ran to the extreme absurdity of representing modern stories in the dresses of nations extinct one or two thousand years before. As to battles being an exception, it is not a fact. Without losing time to refer to examples of an early period, I shall here refer to some well-known pictures. Vander Meulen, who died in 1690, attended Louis XIV. in his campaigns, and painted, in the Royal Chateau, at Marly, the principal battles of that monarch, with a correct representation of the military dresses of the time. Bryan laments, very injudiciously, that the painter was restricted to the modern habiliments; but the advantage of dignified effect to be gained by the Grecian or Roman costume, would be overbalanced by the falsification of the dresses and military weapons. A person who has to give evidence of historical facts, is not allowed to utter untruths for the sake of eloquence. John Hugtenberg, who died in 1702, painted, for Prince Eugene, the battles which that commander fought, in co-operation with the great Duke of Marlborough. In these pictures, he copied the dresses of the combatants. John Wyck did the same in the battle of the Boyne, and, also, in the sieges of Naarden and Namur, which he painted for king William. He observed a similar attention in the battle which he painted as a background to Sir Godfrey Kneller's equestrian portrait of Duke Schomberg. This artist died in 1702, thirty-six years before West was born. The silly story that West was the first who introduced the proper costume in a modern battle is still current. In 1819, West mentioned it to me, and he and his friends believed it. In *The New Monthly Magazine*, June 1, 1820, p. 695, I furnished, in my memoirs of that artist, all the necessary evidence to correct it. But it

has since been re-printed, in a memoir of Mr. West, with as much gravity as if all modern battles had been painted in antique dresses up to the year 1770, when the death of Wolfe was exhibited by West.

West's determination was a proof of his good sense and moral courage. He chose to encounter a serious disadvantage in point of pictorial dignity and grandeur, rather than tell an untruth on the canvas. He could not reconcile it to his feelings and sense of duty, as an historical painter, in representing an action which had taken place in the year 1758, to exclude a portion of the true particulars by which only it could be known, and to substitute particulars which could have no possible relation whatever to it; which had fallen into disuse a thousand, or twelve hundred years before, and which must render it impossible, in a few years, for any person to discover to what battle the picture referred. His words, which I here quote as reported by his biographer, show that, in opposition to Dr. Johnson's opinion, he considered painting an organ of correct historical information. "It is a topic that history will proudly record, and the *same truth* that guides the *pen* of the historian should govern the *pencil* of the artist." Again, he says—"I want to *mark* the *date*, the *place*, and the *parties engaged in the event*, and if I am not able to dispose of the circumstances in a picturesque manner, no academical distribution of Greek or Roman costume will enable me to do justice to my subject." In effect, if he had done so, he would have offered a painting to the world, as the death of General Wolfe, to which, if I may venture so strong an expression, the eye of the spectator would instantly have given the lie.

It is very true that the information communicated by painting requires to be generally preceded by some knowledge of the story or emblems which it represents. Boswell speaks of this as if it were peculiar to painting, and in no degree necessary to poetry. He complacently assumes it as a proof of the inferiority of the former to the latter. But if it be so, it is an advantage which the dullest drudge in *The Dunciad* so far, according to his reasoning, enjoyed over Raffaele, Michael Angelo, and all the renowned sculptors and painters of Greece and Rome. Yet, surely, we are not, on this narrow suppo-

sition, to canonize Gildon, Oldmixon, and the other heroes of Grubstreet, who are

“Damned to everlasting fame,”

in the pillory of Pope’s satirical castigation. Are we, therefore, to prefer those wretched ballad-mongers and libellers in prose, to Myron, Phidias and Lysippus; to Apelles, Zeuxis, Parrhasius, and all their great rivals and contemporaries? But from this alleged inferiority or disadvantage, the most inspired poetry is not free. Certainly, according to Boswell’s confined view of this subject, we must know that there is such an animal as a horse—such weapons as swords, spears, shields, helmets, and other defensive armour, before we can understand the battles of Homer and Virgil, or those of Constantine painted by Julio Romano, from Raffaele’s design; or of the same emperor, by Rubens. If the *Iliad* and *Æneid* had been translated into the Mexican language, prior to the arrival of the Spaniards, the Mexicans, who had never seen a horse in their country, would have required information to understand the passages in which those animals are introduced. I lay very little stress on this isolated supposition, but merely as it instances that every object in nature and art, which men have not seen, and of which they are ignorant, are liable to be misunderstood in poetry, and require an interpreter. The most sublime parts of Milton’s *Paradise Lost*—those in which the Deity is introduced, and the war of the Angels with Lucifer and his host—would be wholly unintelligible if we had not the mosaic history for our guide, and even with the information derived from that sacred authority, much of that noble poem must, from the super-human nature of the subject, for ever remain a mystery to the general mass of readers.

Although epic poetry is a vivid description of general nature, which exercises an almost supreme dominion over the mind of those in whose native tongue it is written, it does not speak an universal language. Without a translation, those two sublime productions of the Grecian and Latin muses already mentioned, would be understood only by the learned few. There must be as many translations as there are nations in the universe, to make them everywhere understood. The fact, that much of the force and meaning of an

original is lost, even in the best translation, needs no argument. But even if those translations were ever so well executed, a vast majority of mankind continue, at this day, in blind ignorance—in-capable of reading and writing. I am well warranted in a belief that the *Iliad* and *Æneid*, in their original languages, convey no more information to nine hundred and ninety nine out of every thousand persons in the world, than a brick, a stone, or clod of the valley. This does not arise from any want of fervour or beauty in the poetry, but from the diversity of languages, and the backward state of civilization in so many divisions of the globe.

On the contrary, if those noble epics on canvass, the battle of Constantine, by Raffaello and Julio Romano, and the battles of Alexander, by Le Brun, were placed before the most ignorant tribe of savages, they would derive a degree of information from them. They would, at once, see that the work of death was going on—that men were the combatants—and that the furious passions expressed, with so much intensity, by the pencil, were those into which they themselves were wont to be hurried in their wars. They would discover in the scenery of those paintings, woods, grounds, rivers, mountains, and skies, which represent the general aspect of nature. From every well-painted historical picture, they would derive a portion of similar information, although everything conventional in the manners, customs, dresses, and accessories, must be wholly unintelligible to them. If we pass from the savage state, to the middle ranks of society in civilized nations, we shall find it probable that the great majority of those classes, although without any cultivation of the arts, would feel their curiosity excited by the inspection of fine historical pictures, and receive, in a greater degree, some such information as that already noticed, from their details.

Painting, sculpture, and poetry, have each distinct advantages arising from the circumstance that the two former enter into the mind and passions through the *eye*, the latter through the *ear*. I leave it to some far more competent pen to settle the balance. If I had all the necessary ability, the limits of *The Analyst* forbid the attempt here. I have not adverted to the subject to lower one of the three by comparison with the others. They owe each other mutual obligations. The Greek sculptors and painters drew their

ideas of beauty, grandeur, and sublimity, from the poems of Hesiod and Homer, and they returned the favour. Although Dryden, in one part of his parallel between poetry and painting, as a poet, gives an advantage to the former, as to extended narration, he agrees in another page, with Plato and Cicero, that the chisel and pencil produce forms superior to nature. "Upon this account," he says, "the noblest poets and the best orators, when they desire to celebrate any extraordinary beauty, are forced to have recourse to statues and pictures, and to draw their persons and faces into comparison." He also adds, further on, "I must say this, *to the advantage of painting even above tragedy*, that what this last represents in the space of many hours, the former *shows us in one moment*. The action, the passion, and the manners, of so many persons as are contained in a picture, are to be discerned *at once, in the twinkling of an eye* : at least, they could be so, if the sight could travel over so many different objects, or the mind digest them all, at the same point of time." Leon Battista Alberti has put this in a very strong point of view, to the advantage of painting, as addressed to the eye. He says—"The *idea of eloquence is as inferior to that of painting as the force of words is to the sight*." That writer conceived, with Othello, the "ocular proof" to be the strongest. It is certain that the effect of a noble picture is produced at once, although the principal details come in for their share of admiration, in the ensuing moments of continued inspection. As painting possesses this power above the poetry of tragedy, the great end and moral aim of which is to give lessons of instruction, it is an admission, on the part of Dryden, that painting can both inform and instruct, the point to which, as an admirer of the latter, my reasoning is directed, without any desire for a superiority.

I must own I cannot conceive how any educated and considerate person can think that there is no information, nor instruction, conveyed by Leonardo da Vinci's Last Supper, at Milan ; Michael Angelo's sublime frescos in the Sistine Chapel ; Raffaello's biblical series and additional historical works, in the Vatican, his cartoons and his other admirable pictures ; by Poussin's Seven Sacraments, Bourden's Works of Mercy, and all the splendid historical and poetical pictures painted during the last four hundred years. I hope that

a few minutes' reflection will reject the supposition as altogether unfounded, and derogatory to the powers of painting.

To look at home : can any unprejudiced person retain an opinion that there is no information, no moral lesson, to be derived from Hogarth's *Marriage a-la-mode*—his *Idleness and Industry*—*Harlot's* and *Rake's Progress*, and his other admirable works ? Is there no information to be gained from all the works of Reynolds—from West's battles of the *Boyne* and *La Hogue*—and Cromwell dissolving the Parliament ? My restricted limits, not my will, prevent me from referring to a number of other striking instances of speaking productions, from the pencils of living British artists.

Here I adduce the opinion of an eminent living painter, Sir Martin Archer Shee, the president of the Royal Academy, the most competent and eloquent modern writer on this subject. "The advantage which poetry possesses over painting, in continued narration and successive impression, cannot be advanced as a peculiar merit of the poet, since it results from the nature of language, and is common to prose. The eye of the painter is required to be as much more sensitive and acute than the eye of the poet, as the accuracy of him who imitates should exceed that of him who only describes. What is the verbal expression of a passion, compared to its visible presence ? the narration, to the action itself brought before your view ? What are the *verba ardentia* of the poet, to the breathing beauties, the living lustre of the pencil, rivalling the noblest productions of nature, expressing the characteristics of matter and mind, the powers of soul, the perfection of form, the brightest bloom of colour, the golden glow of light ? Can the airy shadows of poetical imagery be compared to the embodied realities of art ?"

From the preceding observations on the powers of painting, I shall now advert to the prejudice respecting the license allowed to painters, noticed in the commencement of this essay ; and I will exemplify it by a censure passed upon some parts of Mc'Clise's wonderful painting, "*The Installation of Captain Rock*," which has been exhibited at the Athenæum, in Worcester, and is now in the Birmingham Exhibition. An objection has been particularly made to the introduction of the bevy of very handsome girls, on the right side of the canvass. Their youthful bloom and playful vivacity are,

in the principal censor's judgment, improprieties ; and where beauty is displeasing, it is not unreasonable to suppose homeliness would be welcome. The censor erroneously supposed this subject was exhibited as a representation of a real occurrence and real agents. Having this mistaken notion, he expected to find in it persons and things which exist only in his own mind.* But the actors, circumstances, and every part, are all a daring and vigorous stretch of invention—the pouring out of a young and ardent genius, overflowing with poetical abundance and variety. The entire is a fiction, and entitled to the ample license which, in all ages, from the times of Hesiod and Homer, has been allowed to works of fancy. Moore's Captain Rock, and Mc'Clise's Installation of the Captain, are creatures of the pen and pencil. The picture was never offered to the public as a representation of reality. That the captains of the pre-dial bands, in Ireland, are sworn in with the utmost secrecy, by a select committee, is, I believe, a fact. But that any such formal installation, coupled with a wake of the newly-elected leader's predecessor, ever took place, is denied. Even if we were, for a moment, to suppose that such a crowded investiture and wake had taken place together, as none of the agents were, or are, known, it is surely unreasonable to expect a representation of persons, dresses, and incidents, as if the captain and all the agents were living and well known, and the ceremonial as established a form as the installation of a knight of the garter. There is something so strange in this expectation, that it shifts the charge of incongruity from Mc'Clise to the too rigid critic. It is rather probable he forgot the extent of an artist's license :—

“ Pictoribus atque poetis,
Quidlibet audendi semper fuit æqua potestas.”—*Horace.*

“ Painters and poets our indulgence claim,
Their daring equal, and their art the same.”—*Francis.*

In a picture of the coronation of George the Fourth, or his present majesty, this sort of critical scrutiny would be perfectly just. A correct likeness of the king—of the archbishop who crowned him—of the principal nobility and gentry present at the ceremony—and of the interior of Westminster Abbey, ought to be painted with

such fidelity and spirit, as to be recognized at first view. Copley's death of the Earl of Chatham was an historical picture of this class. Every figure was a portrait from the life. The head of the earl was copied from a likeness painted some years before. If, instead of this lively truth, an artist were to draw a king from his own brain, with fancy heads, persons, and dresses, for the archbishop, nobility, and gentry, and to transfer the scene from Westminster Abbey to St. Paul's Cathedral, or York Minster, in such a case, to offer his coinage to the world as a representation of the coronation of George the Fourth, or William the Fourth, would subject him to the charge of a glaring incongruity, and an entire falsification. The whole might be admirably executed, as far as the pencil and colours could excel, but that would be no defence against a just censure.

Where a picture is not offered as a representation of a reality, and there is not a prototype in existence, or that its existence is only a matter of report, doubted and denied, to censure a noble production of genius, and charge the artist with incongruities, on account of a supposed want of fidelity or *vere-similitude*, is surely not justifiable? I repeat, it appears to me the error and incongruity, in such an instance, is in the mind of the censor who is so inconsiderate as to expect an impossibility, that is, he would have the canvass to contain likenesses of persons and things which exist only in his own fancy, and never entered into the mind or plan of the painter. His objection is not that those young and lovely girls are ill drawn, ill coloured, or grouped, ill painted, or at all indecorous. Oh, no!—it is that they are too beautiful, and beautifully painted. But it is not asserted that nature has withheld beauty from Ireland, or that young and lovely females are not frequent in that island. Their introduction, therefore, in Mc'Clise's picture, is perfectly consistent with a painter's license, and the objection falls to the ground. As I have already observed, in all works of fiction, even in those which are founded in historical events, a writer, or painter, is allowed to introduce such probable agents and accessories, from general society, as are calculated to render his work more pleasing and interesting. This license is not exceeded by the introduction of these beautiful girls in the Installation; on the contrary, the artist, in availing himself of his lawful privilege, has proved the richness of his inven-

tion, the correctness of his judgment, and the delicacy of his taste. He had his choice between homeliness and beauty, and he preferred the latter, as most pleasing to him and, with some very rare exceptions, to all mankind.

If the artist, to excite surprise, and produce a more striking variety, had introduced an elephant or rhinoceros, quietly indulging its curiosity as a looker-on, among the other spectators; a lion tearing one of the peasants in pieces, or a prodigious boa serpent crushing Captain Rock in its enormous folds; as none of these are natives of the emerald isle, or to be found there, their introduction so remote from their proper climate and element would have been an incongruity, and a gross violation of probability. Such a heterogeneous medley would have been an instance of the extravagant folly which Horace ridicules in *The Cypress in the Sea*, and in the satirical verses,

“ Qui variare cupit rem prodigaliter unam
Delphinum sylvis appingit, fluctibus aprum.”

“ While he who tries,
With ever-varying wonders, to surprise,
In the broad forest bids his dolphins play,
And paints his boars disporting in the sea.”—*Francis*.

McClise's object was, to render his picture more interesting and pleasing, without any violation of general probability, by the introduction of those beautiful girls, who, so far from being *un-Irish* and an incongruity, are one of the most excellent and delightful features of his wonderful performance. Even on the dreary shore of the Solway Frith, Sir Walter Scott has introduced, in the miserable hut of a poor and savage fisherman, a young and beautiful lady of family—the green-mantle heroine of his romance—dancing with the ignorant and boorish inmates and their associates, in one of their merry-makings.

I here quote the authority of Sir Walter, as to the general license allowable to a poet or painter. “I ought to have mentioned, in the former edition of this Romance, that Charlotte Tremouille, Countess of Derby, represented as a catholic, was, in fact, a French protestant. For representing the noble Dame in this manner, I have

only Lucio's excuse,—‘I spoke according to the trick.’ *In a story where the greater part is avowedly fiction, the author is at liberty to introduce such variations from actual fact as his plot requires, and which are calculated to enhance it.*”* In this instance the author of *Waverley* justifies an actual deviation from, or rather a falsification of, an historical fact; and in Greece and Rome, the license of poets, painters, and sculptors, to introduce variations from fact, was generally established. According to Virgil, Laocoon, the priest of Apollo, was surprised by the serpents when in the act of sacrificing to Neptune; and, upon the principle of mere congruity, he should have been represented in his sacerdotal vestments; but, as all the anatomical details which constitute grandeur and beauty of form, which are, also, the supreme test of an artist's skill, are concealed by drapery, the three famous sculptors, Polydorus, Athenadorus, and Agesander, represented him naked. Here was a departure from the poetical description; and if those great artists had been fettered and intimidated by censors ready to cry out against incongruities for the better, the world would have been deprived of one of the finest groups of sculpture in existence. Upon the same principle of license, the Roman consuls, emperors, and heroes are represented naked by the sculptors. It would have been condemned as a monstrous incongruity and offence against morals, for the Roman emperors or magistrates to have appeared in their public functions undraped: but that which would have been so heinous in life, was deemed perfectly congruous in the arts, and honoured with the approbation of the Roman critics, historians and people. This comprehensive license was *in the spirit of those ages*; but a naked statue of George IV., of Nelson, Dr. Johnson, or of any other modern king or worthy, would be justly censured, as being contrary to our modern notions of propriety and decency: therefore our British sculptors conform, in this respect, to the spirit of the time and the religious sense of the people. Montesquieu has justly observed, and Blackstone and Paley concur with that eminent authority, that there is a *right reason* in all things, which right reason constitutes the law by which each exists and is regulated. The right reason

* Introduction to *Peveril of the Peak*.

and law of poetry, painting, and sculpture is to please and interest the mind and feelings, without exceeding decorum, general probability, or general nature. I have instanced where historical truth is necessary, and with this reserve, the universal practice of Greece and Rome proves this law to be founded in unerring principles. An attempt to judge of the arts and to rule artists *in all things* by the conventional and fluctuating congruities of modern society, is an endeavour to set up a cold "punctilio of reason" against the practice of all ages or countries, in which the arts have flourished. It is calculated to dull the imaginative powers of genius and degrade the arts.

As "The Installation" is an extraordinary manifestation of various powers by one of the most extraordinary geniuses of the present day, I am anxious to prevent any ill effect from this charge of incongruity, and I shall add one more authority—that of Sir Joshua Reynolds—in the following extract from his Discourses: "In all the pictures which Raffaele painted of the Apostles, he has drawn them with great nobleness; and he has given them as much dignity as the human form is capable of receiving; yet we are expressly told, in Scripture, they had no such respectable appearance; and of St. Paul in particular, we are told by himself, that his bodily presence was *mean*. Alexander is said to have been of low stature; a painter ought not so to represent him: Agesilaus was low, lame, and of a mean appearance; none of those defects ought to appear in a piece of which he is the hero. * * All this is not falsifying any fact, it is only taking *an allowed poetical license*."*

Sir Joshua Reynolds also remarks, "the conduct of Rubens in the Luxembourg gallery, where that great master has mixed allegorical figures with the representations of real personages, which must be acknowledged to be a fault; yet if the artist considered himself as engaged to furnish this gallery with a rich, various, and splendid ornament, this could not be done—at least in an equal degree—without peopling the air and water with those allegorical figures; he, therefore, accomplished all that he proposed. In this case, *all lesser considerations, which tend to obstruct the great end of*

the work, must yield and give way. The variety, which portraits and allegorical figures produce, is not to be slightly given up upon *a punctilio of reason*, when that reason deprives the art, in a manner, of its very existence.”*

In this instance, the exploded Heathen Mythology supplied Rubens with his allegorical figures. The materials, thus obtained, were not only contrary to probability, but to possibility; yet their introduction is justified by Sir Joshua, on the broad ground that they contributed essentially to the end which the painter had in view, of rendering his series of pictures more interesting and agreeable. It is true those allegorical figures had a symbolical application to the real or supposed qualities of Mary of Medicis, and to the most remarkable events of her life. Rubens was, also, kept in countenance by the spirit of the age; for all the poets and painters, his contemporaries, were accustomed to introduce these fabulous deities, with an emblematical signification, in their works. Shakspeare, with a similar view and license, but with infinitely more effect, introduced ghosts and witches in Macbeth and Hamlet: but in doing so, he, also, availed himself of the spirit of the age; and, probably, he, likewise, partook of the belief in those apparitions and demoniac mysteries which then prevailed all over the world. These supernatural agents possessed a fearful interest in his scenes, at that time: at present, when they are disbelieved and laughed at, our dramatic writers have laid them aside as worse than useless. In any modern tragedy, they would be hooted off the stage, and the piece damned.

Shakspeare uniformly violated the unities of time and place to suit his purpose, and render his dramas more effective. If his daring imagination had been cribbed in and confined by an unseasonable punctilio of reason, and a fear of incurring an inapplicable charge of incongruity, he would, probably, never have merited Dr. Johnson’s admirable descriptive lines,

“He looked through nature at a single view,
Exhausted worlds, and then imagined new.”

If his lofty genius had been reined in and curbed with the bridle of frigid and mistaken criticism, he would not have dared a flight beyond "this visible diurnal sphere." There can be little doubt but his fiery spirit would have been tamed down to the dull jog-trot of an ordinary play-wright.

I have, in these remarks, endeavoured, to the best of my humble abilities, to answer an objection which is so frequently urged, without just consideration, against almost every British historical or poetical picture; and I hope I have satisfied the readers that the charge of incongruities in the Installation is groundless. The sanction of Greece and Rome, in their purest ages—of Raffaele and Rubens—of Reynolds, Dr. Johnson (in the last quotation respecting Shakspeare), and Sir Walter Scott, fully prove there is a noble congruity or fitness in the arts founded in general nature, in accord with religious propriety and the spirit of the time; but far more elevated and comprehensive than the conventional congruity (so necessary and commendable in its proper place) or decorum of the social classes, at the present day. The former, according to the precept of Shakspeare, tempers its divine heat with method and judgment. It is that sublime fervour which, on great and noble occasions, enkindles

"Thoughts that breathe and words that burn,"

and

"Snatches a grace beyond the rules of art;"

that is, beyond the mere formal rules of pedantic criticism, which, by injudiciously enforcing what Sir Joshua Reynolds has so aptly termed "a punctilio of reason," out of place and unseasonably, operates, it is to be feared, too frequently, like the film of a cataract on

"The painter's eye, in a fine frenzy rolling,"

and dims, or extinguishes, its power of vision. Each of these congruities has its distinct province and separate license. The one applies to Michael Angelo, Raffaele, and the grand style of historical and poetical painting—the other, to Teniers, Wilkie, Mulready,

McClise, and all pictures on the level of familiar life. The great error of criticism lies in applying or judging by either of those congruities out of its proper department.

November 11th, 1835.

[Neither my limits nor my time permit me to enter into the objection against the Installation of Captain Rock, on account of its tendency as a real or supposed party picture. My admiration of its various excellences does not at all imply any approbation of the choice of subject. Struck with the extraordinary power of genius which it displays, I endeavoured to counteract erroneous criticism, and do justice to its details, in two of my critical letters, under the signature of Lorenzo, published in *The Worcester Herald*; and I subsequently made a similar effort in *The Analyst*. The London newspapers have last week announced the election of McClise to the rank of an associate of the Royal Academy; and the provincial publications here mentioned have had their full share in the duty of heralding this shining star of the British school to that well-merited dignity.]

CHEMISTRY.

THE decline of science in this country has been strongly represented, and deeply lamented, by scientific men. The paths of science, it has been said, are crowded by triflers; few individuals attain the termination of the beaten track; while the labourers who are employed in extending it into unexplored regions, are in number fewer, and in their exertions less strenuous, than in former periods: but the traveller who now treads the stupendous road across the Simplon, must not be condemned, though he have no intention of extending it over yet untrodden mountains, and has, perhaps, no higher object in view than to visit foreign lands in order to enjoy their "goodly prospects." The times are characterized not by vast individual accumulations of knowledge, but by its general diffusion; and though fewer profound works on science may of late have been produced, those of a popular description have greatly increased. The amount of knowledge thus diffused, is generally under-esti-

mated. Accumulated capital is essential to the profitable employment of labour ; and if this maxim be applicable to political economy, how much more so to the economy of knowledge. Each successive generation is in possession of the resources, the accumulated labour, of former generations ; and more knowledge is now easily acquired, than the labour of a life could formerly have secured. He would now be denominated poor, who is not really richer than the wealthy of two hundred years ago ; and that man would be considered as ignorant, who is not possessed of more valuable information than the learned of an earlier period. There was then no " Royal road to learning ;" but now, the forests are cleared, the morasses are drained, the hills are levelled, and such suitable conveyances have been provided, that a journey, formerly toilsome and tedious, is now easy and agreeable. The traveller has no longer to trace for himself a path through an unsurveyed wilderness, sometimes lying down in despair, and at others threading, with indefatigable perseverance, a maze terminating far wide of the track he ought to have pursued. The path, now, "is so smooth, so green, so full of goodly prospects and melodious sounds on every side, that the harp of Orpheus was not more charming." And are the multitudes who are in pursuit of knowledge, because they have climbed no rugged steep, and have ascended by easy acclivities, to be told that they are loiterers, and have attained to nothing ? General readers on science are situated like the inhabitants of Mexico, who, it is true, dwell upon a plain, but it is a plain elevated, indeed, above the tops of the mountains with which our forefathers were acquainted.

Among the sciences there is none which has become so popular as Chemistry, and for this it is by no means difficult to account. The commencement of most studies is tedious, but the very rudiments of Chemistry are interesting, and are enlivened by curious and beautiful experiments. Most sciences are of remote origin, and their advancement is slow, but Chemistry, as a science, is altogether of recent creation, while the rapidity of its progress, the brilliancy of its discoveries, and the astonishing facts which it reveals, constantly excite, in the mind of the student, the pleasure arising from novelty and surprise.

The splendid progress of Chemistry is well depicted in a quaint, but beautiful, description of a sunrise, by Bishop Taylor. The science had long been hidden during the dim star-light of a dreary night, occasionally lighted up, perchance, for a moment, by the quick passage of a fiery meteor, and relapsing again into a deeper darkness. "But when the sun approaches towards the gates of the morning, he first opens a little eye of heaven, and sends away the spirits of darkness, and gives light to a cock, and calls up the lark to matins, and, by and bye, gilds the fringes of a cloud, and peeps over the eastern hills, thrusting out his golden horns like those which decked the brows of Moses, when he was forced to wear a veil because himself had seen the face of God; and still while a man tells the story, the sun gets up higher, till he shews a fair face and a full light." Such was the state of Chemistry during the long night of alchemy—such its sudden rise and development; and it still may be considered but as in the early dawn of a glorious day.

It may not, perhaps, be uninteresting to take a rapid survey of the progress of Chemistry. The ancients practised many of the arts dependant upon Chemistry—as those of dyeing and smelting—but in profound ignorance of the principles upon which they depended. Then arose Geber, the Arabian, the father of the most indefatigable race of men which the world ever produced.* Their researches were, however, principally confined to the visionary pursuit of the philosopher's stone, and that of the elixir of life, which were to confer upon the possessor unbounded wealth, and an immortality of blooming youth. Upon this subject, five thousand volumes

* The style in which the earliest of the chemists wrote, was not *particularly* lucid and simple. The names of two of these writers, that of Geber, and that of Phillippus Aureolus Theophrastus Paracelsus Bombast ab Hohenheim, are immortalized in our English words *gibberish*, correctly *geberish*, and *bombast*. The following is Geber's account of that grand desideratum, the philosopher's stone. "We endeavour to make one substance, yet compounded and composed of many; so permanently fixed, that being put upon the fire, the fire cannot injure; and that it may be mixed with metals in flux and flow with them, and enter into that which in them is of an ingressible substance, and be fermented with that which in them is of a permeable substance, and be consolidated with that which in them is of consolidable substance, and be fixed with that which in them is of a fixable substance, and not be burnt by those things which burn not gold and silver, and take away consolidation, and weights with due ignition."—*History of Chemistry*, i., 132.

have been written ; and it is melancholy to reflect upon the misdirected talent, the unsubdued industry, the life-consuming energy, with which every object under heaven was tortured to reveal the grand secret. So completely were these deluded men absorbed in their golden visions, that friends, fortune, reputation, health, were sacrificed, and life itself was forfeited without a murmur. To their heated imaginations, not only the celestial bodies seemed to influence their pursuits, but angels and demons were engaged in forwarding or in frustrating their views. Heaven was to be propitiated by fasting, by watching, and by prayer, and the powers of darkness were to be compelled by magic, which, ridiculous as it seems to us, was to them fraught with all the terrors of a real combat with satanic agents. Never, surely, was the fable of the Treasure in the Vineyard more literally fulfilled ; for while they dug in vain for hidden wealth, which nowhere existed, they prepared the ground for a rich vintage ; they discovered many valuable agents, and laid the foundation of the most important branch of natural philosophy. Then came the times of Stahl and the phlogistic hypothesis, succeeded by that of Priestly, Lavoisier, and Cavendish ; periods rich in discovery, and in which successive theories were proposed, gradually approximating to the truth. At length, in our own days, the atomic theory, or doctrine of definite proportions, was distinctly propounded. The chemist was enabled to reduce the approximations of analysis to mathematical precision, and Chemistry was at once elevated to the rank of an exact science. Galvanism was applied as a chemical agent, and revealed the metallic bases of the alkalies and earths. Discoveries, still incomplete, have shewn that all chemical changes are dependant upon this subtle agent, and that they are effected by it with a power surpassing the bounds of the wildest imagination ; for it is highly probable that, during the decomposition of a drop of water by a grain of zinc, more electricity is evolved than is elicited in a thunder-storm. It has been proved that the particles of the most solid substances are in constant motion, and that, so far from matter being endowed with a *vis inertie*, there is nothing in nature that is at rest ; and it has been demonstrated that bodies exist, such, for instance, as succinic and acetic acids, differing widely in external appearance, and in their properties, yet consisting of the same ele-

ments, combined in the same proportions, but whose atoms are differently arranged. Changes the most singular have been found to be readily effected in organic substances, such, for instance, as the conversion of saw-dust into gum, sugar, acetic, formic, and oxalic acids, and alcohol. Vegetable alkalies have been discovered, containing, in a few grains, the active principle of considerable quantities of the most powerful drugs; some of them so potent as to extinguish life in doses almost infinitesimal: while every new discovery, instead of narrowing the field for exertion, opens to the view new paths for investigation.

On reflecting upon these extraordinary discoveries, we cannot contemplate without pleasure the amount of talent employed in furthering the progress of the science, nor feel surprised at the popular interest which it has excited; and it is our intention, in future numbers of *The Analyst*, to report the recent discoveries which are made in the science, and the improvements effected in the arts dependant upon it, both in this country and upon the continent; occasionally to furnish sketches of the manufactures immediately connected with it, and our readers will, we trust, sometimes permit us to insert papers more strictly scientific. As this paper has already extended to a considerable length, we can at present merely notice the discovery of another of those active vegetable principles, which every fresh analysis of plants brings to light.

This substance which has been termed Diatase* by its discoverers, MM. Payen and Persoz, occurs in barley which has just begun to vegetate. It has little or no action upon any organic matter, excepting starch, upon which it is so considerable as to render 2,000 times its weight of the latter soluble in four times as much warm water. If the proportion of the diatase be increased to about one two-hundredth of the weight of the starch, and the whole heated to a temperature less than that of boiling, it will be found that the starch

* Diatase is procured by bruising in a mortar fresh sprouted barley, moistening it with half its weight of water, and submitting it to pressure. The liquid which separates, is mixed with a sufficient quantity of alcohol to destroy its viscosity and precipitate the azotized matter, which is separated by filtration. The filtered solution, precipitated by alcohol, affords impure diatase; which is purified by three additional solutions and precipitations. It is then collected on a filtre, dried on plates of glass, and kept in well-closed vials.—See *Records of Science*.

has been wholly converted into a mixture of sugar with a gum, resembling gum arabic. The latter is now employed, in the great hospitals of Paris, as a substitute for gum arabic.

The fact has been long known, though not previously accounted for, that beer, equally strong, may be brewed from a mixture of malt and barley, as from malt alone; and distillers have availed themselves of this circumstance. The starch of the barley is, by the action of the diatase of the malt, converted into gum and sugar, and the latter, when fermented, furnishes the alcohol or spirit.

In organic analysis, diatase, from the extraordinary power which it possesses of rendering soluble so vast a proportion of starch, will render valuable service, as it will enable the chemist to separate the smallest portions from foreign substances.

REMARKS ON THE NECESSITY OF IMPROVEMENT IN EDUCATION.

NOTWITHSTANDING the importance of the subject, and the care which has been bestowed in its investigation, education is yet in its infancy. This circumstance has arisen from the neglect with which those engaged in the instruction of youth have treated everything relating to the *mind*, and its springs of action. If teachers are utterly ignorant of the right method of imparting instruction, both moral and intellectual—and no one can deny that they are—it certainly cannot be owing to any scarcity of excellent publications, or high authorities, on the subject. Locke's *Thoughts on Education*, was published as far back as 1690, and abounds in excellent precepts and sound advice to preceptors; and if they had imbibed but a tithe of the wholesome doctrines developed in this valuable little work, they would have rendered their own situation more pleasant to themselves, and more profitable and delightful to their pupils. Teachers, both in private families and in schools, have generally received their education at some public school; and if human in-

geniunity were taxed to devise a system of instruction diametrically opposed to that which reason and justice dictate, it would be hard to devise a plan more dissonant with every principle of humanity than the one now generally adopted. After leaving college, the embryo tutor is said to have "finished his education;" but in what way? By having been instructed in the principles of the commonest phenomena which present themselves in nature? By learning the simplest processes of art? By being initiated in the wonders of chemistry, natural philosophy, astronomy, geology, and last, though not least, anthropology? No!—but by having pored over the vice-stained pages of the Greek and Roman authors—by having been taught to sympathize with injustice, cruelty, and vice in every shape. In *The Phrenological Journal* it is remarked:—"There is a scarcity of teachers possessing knowledge sufficient to render them capable of conducting an institution established on the principles of reason or common sense. This is not to be wondered at, considering how few are educated for the profession, and that every person who has been reduced to poverty, by misfortune or indiscretion, comes to swell the ranks of the *guides and preceptors of youth*:" and again; "In Britain, however, where no one can practice physic without having his qualifications closely scrutinized, every body may take upon him to teach."

It is a matter of astonishment how slow the world has been progressing in everything relating to education. Most of the errors condemned by Locke, as prevalent in his time, are prevalent now. Among these may be reckoned the extraordinary custom of engaging a tutor with scarce any previous examination. I will quote a passage from the work of that great man in illustration of this fact:—"The character of a sober man and a scholar is, as I have above observed, what every one expects in a tutor. This, generally, is thought quite enough, and is all that parents commonly look for. But when such an one has emptied out into his pupil all the Latin and logic he has brought from the University, will that furniture make him a fine gentleman? Or can it be expected that he should be better bred, better skilled in the world, better principled in the grounds and foundations of true virtue and generosity, than his tutor is?"

A knowledge of phrenology is indispensably necessary to an instructor of youth, as this science clearly shows that every pupil possesses faculties differing in power, and each pupil, consequently, requires a different mode of treatment. The generality of teachers appear ignorant that the capacities of children differ; but if these *enlightened* instructors of the nineteenth century would consult one who wrote nearly two hundred years ago, they would learn that "God has stamped certain characters upon men's minds which, like their shapes, may, perhaps, be a little mended, but can hardly be totally altered and transformed into the contrary. He, therefore, who is about children, should well study their natures and aptitudes, and see, by often trials, what turn they easily take, and what their native stock is, how it may be improved, and what it is fit for: he should consider what they want, whether they be capable of having it wrought into them by industry, and incorporated there by practice; and whether it be worth while to endeavour it: for in many cases, all that we can do, or should aim at, is to make the best of what nature has given, to prevent the vices and faults to which such a constitution is most inclined, and give it all the advantages it is capable of. Every one's natural genius should be carried as far as possible, but to attempt the putting another upon him will be but labour in vain." For instance, if a person has the organ of language largely developed, but that of number small, he will make a good linguist, although it will be a vain attempt to make him an arithmetician. In the above-quoted passage, Locke recommends that the teacher should, "by often trials," discover the natural turn of the pupil's mind, but phrenology renders this unnecessary. An inspection of the pupil's head will give the teacher a more intimate and a more correct knowledge of a pupil's character and aptitudes, than he would gain by living twelve or twenty years under the same roof.

In a former paper on the subject of education,* I observed—"it may safely be affirmed that if a pupil does not advance in his studies, or does not advance so quickly as is expected, the fault is never his own;" and I subsequently came to the conclusion, that,

* Vide *Analyst*, vol. ii., p. 413.

“in every case in which the pupil remains stationary, or advances but slowly, the cause must be referred either to the ignorance of the teacher, or to the mal-organization of the pupil's brain.”

It may be enquired how I arrived at this conclusion ; I answer, from constant and close observation. If it was *not* true, the business of teaching would indeed be a dreary and dispiriting occupation. The master would be at the mercy of the pupil, and no care on the part of the former could insure him a harvest in proportion to the pains bestowed in cultivating the mind of the pupil. But by adopting the plan nature has wisely marked out, the teacher may be assured that, if his pupil is blessed with moderate talents, his reward will be in proportion to the skill and care he has bestowed on his youthful charge. This is a cheering thought, and it ought to be known and cherished by every one who has the care of youth.

I have invariably remarked that, in proportion to the ignorance and unskilfulness of the tutor, in the same ratio are the frequent complaints of the want of mental capacity in the pupil. The trite adage of “A bad husbandman complains of his soil,” is equally applicable in teaching. The act of imparting knowledge has been aptly compared to pouring water into bottles. Some children have less aptitude for learning than others, and these resemble the bottles which have narrow necks ; and so much the more skill is requisite in these instances. What glory is there in having brought up men of genius ? these will acquire knowledge under the worst, or rather, *in spite of* the worst, systems of teaching, and is amply testified by the few (comparatively few) great men who have received their education within the precincts of our public schools and universities. But let the teacher exert his talents in bringing forth mediocrity ; here is scope for his skill—here is a field for his exertions.

It is notorious that compulsion makes even the pleasantest things disagreeable. Locke understood this, and in order to convince those who are guided by authority when reason alone would fail, I shall quote his words :—“None of the things they [pupils] are to learn, should ever be made a burden to them, or imposed on them as a task. Whatever is so proposed, presently becomes irksome ; the mind takes an aversion to it, though before it were a thing of delight or indifference. Let a child be ordered to whip his top at a

certain time every day, whether he has or has not a mind to it ; let this be but required of him as a duty, wherein he must spend so many hours morning and afternoon, and see whether he will not soon be weary of any play at this rate. Is it not so with grown men ? What they do cheerfully of themselves, do they not presently grow sick of, and can no more endure, as soon as they find it is expected of them as a duty ? Children have as much a mind to shew that they are free, that their own good actions come from themselves, as any of the proudest of you grown men, think of them as you please." I knew a youth who was a striking confirmation of this. He was, at one period, remarkably fond of walking with his tutor ; but after a time, when *obliged* to walk every evening, for an hour, in his society, he became disgusted with the dreaded promenade.

Locke truly observes—" I am apt to think perverseness in the pupils is often the effect of *frowardness in the tutor*." When we hear, therefore, a tutor making bitter complaints of the backwardness of his pupils, it may be fairly inferred that he is not fit for his situation. A teacher should endeavour to interest his pupils in their studies, and induce them to take a delight in their intellectual employments.

But I am far from advocating a lax mode of training. Mr. Abbott truly remarks—" It is a great, though very prevalent, mistake, to imagine that boys and girls like a lax and inefficient government, and dislike the pressure of heavy control. *What they dislike is sour looks and irritating language* ; and they, therefore, are, very naturally, averse to everything introduced and sustained by their means. If, however, exactness and precision in all the operations of a class, and of the school, are introduced and enforced in the proper manner, *i. e.*, by a firm, but mild and good-humoured, authority, scholars will universally be pleased with them. They like the uniform appearance, the straight line, the simultaneous movement. They like to feel the operation of system, and to realize, while they are in the school-room, that they form a community, governed by fixed and steady laws, *firmly*, but *pleasantly*, administered. On the other hand, *laxity* of discipline, and the disorder which will result from it, will only lead the pupils to despise their teacher, and to hate

their school." It is firmness, joined with good-humour, that is so essential a requisite for a teacher. He who is perpetually with a fierce countenance, angry tone, and harsh words, will soon fall into contempt, and he will, at last, cease even to be a *scare-crow*. Masters of this unfortunate disposition always seem to forget that, by roughly speaking to the pupil, they set an example of the same to the objects of their pernicious passion. "Passionate chiding," says Locke, "usually carries rough and ill language with it, which has this further ill effect, that it *teaches and justifies it in children*. And the names that parents and preceptors give them, they will not be ashamed to bestow on others, having so good an authority for the use of them." As long as teachers adopt this system, they will excite the contempt of their pupils, who will make little or no progress, except in the development of their animal organs.

It is often said that peculiar and careful methods of teaching may be necessary with infants, but when a pupil has "arrived at a certain age," he should work independent of the teacher, from whom he would only require occasional hints. This might be the case if a right method of instruction was adopted when young. But, as Locke truly remarks, "having made them ill children, we foolishly expect them to be good men." And this expectation, like every other founded on wrong grounds, always has been, and always will be, disappointed.

I have only been able to touch on a few of the more prominent topics relating to education in this paper, owing to my limited space ; but as it is a subject which involves the well-being and happiness of all classes, I trust these remarks will induce an investigation into the defective system which at present exists in this country.

S. D. W.

ON THE IMPORTANCE OF THE STUDY OF BOTANY TO MEDICINE.

BY C. JOHNSON, *Lecturer on Botany at Guy's Hospital.**

REVERTING to the state of the medical profession some twenty or thirty years back, and the ignorance of too many of its self-elected practitioners, of the most essential requisites for a pretender to the healing art, a knowledge of the anatomy and physiology of the human frame, and the symptoms and treatment of the various diseases by which its functions are liable to be interrupted and impaired—the denizen of the present time has much reason to congratulate himself upon the revolution which it has undergone since that period—a revolution that has contributed towards rendering even the uncertain tenure of mortality less precarious, by securing to him the advice and assistance of persons expressly qualified, by their education, for that purpose. The impudent system of quackery, so often held up to ridicule at the present day, was certainly not without its parallel formerly in the so-called medical profession, when, after a longer or shorter period spent in pounding and compounding, the capability of administering both simples and compounds seemed naturally to follow. The lengthened and important course of studies required at the present day, does not wholly preclude the possibility of a man of inferior talent entering the profession, but we have still the satisfaction of knowing that a complete blockhead has not the same opportunity that he once had, of placing himself in competition with the man of ability and liberal education.

Of the various branches of knowledge that bear upon medical science, Botany seems to have been the most backward in arresting the attention of those entrusted with the superintendence of medical education. The improvement of this latter has been progressive; and the impression of the high importance of those studies that led to a knowledge of the structure and functions of the animal body,

* The following paper was read before the Medico-Botanical Society, London, on the first meeting of the present session, Nov. 10th, 1835.

of the practice of medicine, of chemistry, and *materia medica*, caused them, under the then existing circumstances, to precede that of botany. Hence, indeed, long after the establishment of schools for the tuition and preparation of candidates for medical license, it continued to be regarded as a mere adjunct of the latter class, *materia medica*. As such it was confined, in this country at least, to the notice of the plants of the pharmacopœia; and as regarded his progress in a science now so complex, the student of medicine, thus tutored, resembled the preacher who could *read*, but only in his own book. He might have learned to know the drowsy poppy of the garden, perhaps even to trace its relation with the gaudier crimson tenants of the corn-field—challenge the drastic hellebore, the fox-glove, nightshade, and conium, of his native land; but was rarely capable of extending his lore to the more distant affinities which characterize the vegetation of a different clime; and therefore ill-calculated to avail himself of their valuable, or to avoid their baneful, properties: still less to add, by observation and experiment, to the most useful department of that science, to a knowledge of which he would, probably, pretend.

Among the several causes which have led to a more extended application of botany to the purposes of medicine, the establishment of the Medico-Botanical Society may certainly lay considerable claim to public notice. During its career, the attention of a large portion of the junior members and aspirants of the profession, has been directed by it to the importance of a subject which, but for their attendance upon its meetings, would, probably, have remained a matter of indifference to them. I say of indifference—because the extensive facilities afforded to the mere mechanical practitioner, and of such there are, unfortunately, still too many, by the vast commercial machinery of this ever active and enterprising nation, has rendered him, in a great measure, independent of his own resources. He gives an order to his druggist, depending upon the latter for the correctness of its execution; and as to anything farther, why—as an unworthy disciple of Esculapius not long since replied to a friend of mine, who ventured to hint that too violent medicine had been administered to an infant—“There is a book called the pharmacopœia, in which the art of compounding medicines for every disorder,

and even the proportionate doses for every age, are duly set down. I always consult that book before I prescribe, and therefore, Madam, cannot be under a mistake." So that, really, with a good druggist, named bottles and jars, and Thompson's *Dispensatory* upon his counter, such a man may do a good stroke of business, as the mercantile phrase has it, with very little judgment, but a great deal of satisfaction—to himself. For the sake of their patients, I fear very few such attend here ; for they would learn, at least, that drugs will vary very greatly in quality—that the bark, the root, the herb of the same species, gathered at different seasons, do not contain the same principles ; this, at one period, is an active medicine, at another, next to useless ; and besides, if chicanery will practice upon the immediate necessities of life, the commerce of medicine is not likely to be wholly free from its impositions.

Experience has shewn that not only the imported articles of the *materia medica*, but even those of home growth, are often the vehicles of fraud that renders negative, if it does not totally subvert the intentions of the adviser. The leaves of the senna are mingled with those of several other plants, of less valuable and of deleterious quality ; the lithontriptic and diuretic properties of the *uva-ursi*, are supplanted by the simple astringency of the *vaccin. vit. id.* : and even the bark of the tree of life itself—the highly-prized *cinchona*—is vilified, and its restorative virtues abused, by the cupidity of the fraudulent and grasping trader, who, with no other object in view than that of his individual profit, scruples not to impose upon his ignorant customers that of other trees of inferior worth. Now, even in the state in which these and numerous other vegetable substances are submitted to the inspection of the faculty, a knowledge of botany will often afford a test of no small importance in the choice of an article which a person proposes to prescribe and administer, where his fortune, and, what is more valuable to a medical man, his reputation, is at stake. Even a very few years since, how few in this country were possessed of a sufficient share of that knowledge for such an application of it. Men who had risen to the highest rank in their profession, scarce knew a nettle from a crow-foot, and the capability of not confounding a mullein with a fox-glove, seemed almost a miraculous stretch of botanical acquirement

for a doctor, to one who had heard, in a very learned assembly too, a yellow gentian, in full flower, hailed as a splendid specimen of digitalis. Such ignorance, however, was pardonable in the accomplished individual who betrayed it—in one educated at a period in which the utility of botany was not even dreamed of, as a necessary part of the study for a physician. Now, however, who would be justified in pleading apology for overlooking or slighting the advantages it offers? Surely no one is ignorant that the structure of the vegetable frame is determined by laws as absolute, as invariable in their action, when left to the guidance of nature, as are those which govern the development of the various species of animal existence; and that as the mighty genius of comparative anatomy, the highly talented and lamented Cuvier, could, by his magic touch, bid the disunited and scattered bones of a thousand different individuals arrange in the original order of the frames they once gave form to and supported; so the botanist, practised in the intricate lore of vegetable anatomy and physiology, reads often, in the venation of a leaf, or the texture of a bark, the character of the plant to which it belonged, in opposition to that of others whose products may be mingled with them. Thus, without any knowledge of the individual plant which produced them, he would scarcely suspect the dotted leaves of this plant, to possess the same qualities with the finely reticulated ones of that beside it—because the very presence of such dots upon leaves, which are glands for the secretion of some essential oil, he knows to be, in almost every instance, an important and invariable feature of the order or natural group in which it is found, and, therefore, that their absence betokens very different affinities and properties. In the same way, he would not mistake the silky-textured bark of the thymeleæ, the daphne or mezereum tribe, for that of the laurineæ, the bay or cinnamon tribe; the different structure of the two would be to him as certainly indicative of their being the produce of two widely distant orders, as is the caustic character of the former, contrasted with the fine aromatic and stomachic qualities of the latter.

It is true such important distinctions as these may not exist between the much libelled Peruvian drug, and its spurious substitutes or representatives, but another branch of botanical knowledge would

at least be sometimes useful even here. Had he, in addition to the structure and economy of the more highly organized plants, traced that of the descending series to the lowest verge of vegetable vitality, and observed the distribution of the varied forms of both, such circumstances would not be destitute of utility. He would have become aware that the numerous species of lichens and fungi are confined to peculiar media, upon which alone they would seem to be capable of existing. The various primitive and secondary rocks yield a resting place to particular species of the former tribe especially; and so invariable is this attachment that the geological botanist, if I may be allowed the expression—seeing it is scarcely possible to separate, at least, an outline of the one science from an intimate acquaintance with the other—the geological botanist will often judge, by the hue of its surface clothed with a thin coating of primeval vegetation, the composition of the rock which he is approaching. Thus, likewise, the greater number of the epiphytic lichens, though probably subsisting solely upon the moisture contained in the atmosphere, are not indiscriminately scattered upon the stems of all the different species of trees in the same climate, but vegetate exclusively upon those the outer surfaces of whose barks afford them the necessary texture to which nature has adapted their powers of adherence. The skilful landscape-painter knows how to adapt his colours thus to the trunks of those trees he is desirous of representing; he sees that of the oak invariably differing in the hue of its humble dependants, from that of the beech, the elm from the willow, and so on of others.

The fragments of the imported barks carry these minute and long-neglected adherents to the living fabric which bore them, even after being housed for years in the obscurity of our warehouses, so little altered that the eye of the cryptogamic botanist is at no loss to detect their very species. The memoir of Fée contains much curious matter for speculation upon this subject; and though his researches have, perhaps, had more importance attached to them, by some, than they actually deserve, it cannot be contested that these natural indications of organic difference between the spurious and true officinal barks, are entitled to more attention than the incredulous, because often ignorant, inspector is willing to allow.

Future observation will probably render them still more so, by associating them with important geographical phenomena. It is an indisputable fact that certain genera, and even orders, of plants are mutually adapted, by that similarity in their organization which occasions us to class them together, to inhabit, almost exclusively, the different climates in which they are indigenous: particular proportions in the mean temperature and moisture of the atmosphere, perhaps combined with some other yet unappreciable influences, acting under different parallels, or at different elevations upon the surface of our globe, have prescribed limits which some of the natural groups of the vegetable kingdom have never yet passed, or beyond which they are but very slowly progressing. Thus, the extensive genus *Erica*, or *Heath*, consisting of about four hundred known species, belongs almost exclusively to the southern extremity of Africa; some eight or ten are scattered over Europe, but not a single species has been hitherto discovered on the opposite continent of America, or its islands. There, however, the *Cacti* communicate a remarkable feature to the equatorial regions, and the *Oaks* and *Magnolias* to the northern continent. To the neighbourhood of the Cape of Good Hope, the country of the *Ericæ*, our collections are, likewise, indebted for the multitudinous families of *Pelargonium* and *Mesembryanthemum*; while, on the other hand, the *Passifloræ* without, and the *Bignonæ* with very few, exceptions, are confined to the meridional or central part of the new continent. Of the *Roses*, not a single indigenous species is known either in South America or Africa. Of the *Aloes*, only one species is a doubtful native of the West-Indian islands—the Barbadoes *Aloe* of the shops; three or four species only of a genus originally very numerous, though now divided, are met with out of Africa: while, on the contrary, two allied genera, the *Yucca* and *Agave*, are exclusively aborigines of the western continent. Other natural groups and their species are found only at particular elevations above the level of the ocean. The *Cinchonacæ* of the tropical forests, Humboldt ascertained to be confined by limits of this description. And though some of the epiphytic lichens are found to be indifferent to temperature, others are only capable of existing at a certain mean, and their presence, therefore, upon the dried bark would be

indicative of the natural site of the tree that produced it. We are yet, however, but as children in regard to our knowledge of the mutual dependence of organic beings upon each other; and still more so, when we view them in connection with the complicated chemical and mechanical agency with which their existence is amalgamated.

SKETCHES OF EUROPEAN ORNITHOLOGY.

(GOULD'S "BIRDS OF EUROPE.")

IN conformity with the pledge given in the last number of *The Analyst*, we proceed to analyse the splendid work of Mr. Gould on *The Birds of Europe*. The First Part, with which we shall commence, made its appearance in June, 1832, and has been regularly followed up, at intervals of three months, by the publication of its successors. Each part consists of twenty folio plates: the figures drawn upon stone, in a style of uncommon accuracy, and, in general, coloured with admirable taste, fidelity, and effect. The more striking peculiarities of plumage, which result from age or sex, are frequently illustrated by the introduction of two figures; and sometimes, although more rarely than we were led, from perusal of the Prospectus originally published by Mr. Gould, to expect, two or more of the species of a genus of the middle-sized or smaller birds are grouped together in a plate. In that Prospectus, Mr. Gould proposed that each part of his work should exhibit, on the average, *twenty-five* species. Hitherto he has failed in the performance of this important pledge. Fortunately, however, for his own credit and for the interest of his subscribers, the hour of redemption is not yet irrevocably past.

The analysis upon which we are about to enter will, ordinarily, comprehend the *specific* and, whenever the institution of new genera may require, the *generic characters* of each bird, as traced by Mr. Gould; and all the more novel or valuable information which may

be gleaned from his accurate and masterly descriptions; the synonyms of the species in the English, Latin, French, Italian, and German languages; and occasional remarks on the new systems of ornithological arrangement and nomenclature, as proposed by modern writers, and, more especially, by an able, but anonymous, contributor to *The Analyst*; whose labours adorn our last and present numbers. The luminous descriptions of Temminck, and the iconographical productions of Selby, Werner, Meyer, and other of the more successful and celebrated delineators of the bird-class will also frequently be referred to.

FIRST PART.—PLATE I.—Presents a figure of the Lesser Kestrel, —*Falco Tinnunculoides*,—Faucon Cresserellette, *Fr.*—*Falco di terre diverso*, *It.*,—distinguished from the common European species, *F. tinnunculus*, by 1st. the extension of the wing to the extremity of the tail; 2d. absence of spots from the superior part of the plumage; 3d. perfect whiteness of the claws; and 4th. marked and constant inferiority of size. The adult female, somewhat larger than the male, so closely resembles the female of *F. tinnunculus*, as only to be distinguishable by attention to the first, third, and fourth points of specific difference, above traced. She lays four eggs; differing little, in size and colour, from those of the common Kestrel. *F. tinnunculoides* inhabits the southern and eastern regions of Europe, and preys upon the smaller *mammifera* and birds, but principally upon the larger species of coleopterous and hymenopterous insects, which it captures, with almost unerring precision of aim, upon the wing. No specimen of it has as yet been recorded as taken or seen in the British islands. The propriety of constituting a new genus which, with the two Kestrels, shall include *F. rupicolus*; *F. spervarius*,—for an excellent figure and description of which, see *Fauna Boreali-Americana*, vol. ii., pl. 24, page 31; and “several other species, of America and its adjacent islands,” is cursorily adverted to by Mr. Gould. His figure of our present subject is admirably drawn and coloured. Werner’s corresponding plate, given in the second *Livraison* of the *Atlas des Oiseaux d’Europe*, will not, for one moment, sustain comparison with it. Might not a more eligible specific designation than *tinnunculoides* be conferred upon this species; distinguished as it is, from its most nearly-allied congener, by greater

length of wing, and whiteness of claw? This is a point too knotty for us to decide upon. We leave it, contented with having thrown out the mere hint, to be settled by the zealous ornithological reformer of Derby, and the acute, but too bitterly "sarcastic, Senex."

PLATE II.—The Red-footed Falcon,—*Falco rufipes* (Ingrian Falcon, and Orange-legged Hobby, of Latham,—*Falco vespertinus*, of Gmelin),—le Faucon à pieds rouges, *Fr.*—(Variété singulière du Hobereau,—singular variety of Hobby, of Buffon),—*Falco barletta piombina*, *It.*—Rothfussiger Falk, *G.* This fine species, previously known as principally inhabiting the Russian province of Ingria, where it is named Kobez, will acquire a peculiar interest in the eyes of the British ornithologist; since it is now formally recognized, from re-iterated instances of capture in our own island, as a British bird. It is distinguishable from all the other Falcons, and especially from the Hobby to which it is most nearly allied, and of which Buffon considered it a mere variety, by the *orange-red colour of its feet*. Hence, its specific designation is most apposite and unobjectionable: and the lucky bird, unlike certain other aspirant and predatory animal bodies exhibiting *orange members*, may set reformers and reform, and even the menaces of the great Philo-Hellenic Hume himself, at utter defiance. The plate exhibits specimens of an adult female and male, exquisitely drawn and coloured. The corresponding figure in Werner's second number, although excellent, must at once succumb to the superiority of talent evinced by Gould. *Omnia cedant Auro.*

PLATE III.—The Kingsfisher,—*Alcedo ispida*,—Martin-Pêcheur Alcyon, Baboucard, *Fr.*—Gemeine Eisvogel, *G.* It hath often strangely perplexed us to divine where and from whom this beautiful little creature acquired its specific designation. Time after time, have we rummaged lexicons and other musty repositories of ancient lore in search of the unknown epithet: yet no such term as *ισπιδος* in the Greek, or *ispidus* in the Latin, has been found to reward our patient scrutiny. Peradventure, that profound ornithologist and erudite scholar, Professor Rennie, should these humble pages be honoured with his glance, may commiserate, and deign to "enlighten our ignorance" on this subject. As *ispida* is the only European species of the *Alcedo* genus, we shall not pause to trace its specific cha-

racters. A more apt and significant designation might be surely taken from the bright and strongly-marked colours of the bird. The generic characters may be seen in Temminck, *Manuel d' Ornithologie*, p. 418 ; Selby, *Illustrations of British Ornithology*, vol. 1., p. 135 ; and Gould's *letter-press* accompanying the Plate. The genus, *Alcedo*, composes, with *Merops*, the seventh Order, *Alcyones*, of Temminck ; and constitutes, alone, the fifth Family, *Halcyonidæ*, of the British *Insessores*, of Vigors and Selby. The colouring of the Kingfisher by Mr. Gould, is as extraordinarily accurate as soft and splendid. The figure, however, as regards the body of the bird, is unnaturally thick and clumsy ; and by no means equal, in fidelity and spirit, to the more humble production of Bewick's graver : nor is the attitude of the voracious little creature, silently watching over the stream for its finny prey, in our opinion, so strikingly characteristic, as that which has emanated from the genius-inspired hand of the rude and self-taught Northumbrian Ornithographer.

PLATE IV.—The Goosander,—*Mergus Merganser*,—Grand Harle, *Fr.*,—Mergo Oca Marina e Mergo Dominicano, *It.*,—Gansensager oder Taucher-Gans, *G.* This species, the largest of the genus, is the *Green-headed* Goosander, of Fleming (the *Merganser*, of other Ornithologists) ; and should have a Latin specific designation, founded upon this unvarying character of the adult male bird. The female differs from the male, not only in inferiority of size, in the rufous-brown colour of the head, neck, and crest, and less brilliant orange-red hue of bill, iris, and tarsus ; but in the absence of those peculiarities of anatomical structure which the windpipe of the latter constantly exhibits. The respiratory tube of the *male* presents two enlargements previously to its termination in the bony labyrinth at what may be correctly termed its sternal extremity. The trachea of the *female* is alike destitute of such dilatations, and of the labyrinth. These marked differences of internal organization and of colouring, formerly led to the erroneous inference,—still farther confirmed by the close resemblance which the plumage of the male, during the first year, exhibits to the plumage of the female,—that the latter constituted a genus perfectly distinct from the *Merganser* ; which hence became the *Mergus Castor* of the *green-headed* Gmelin,—the Dun Diver or Sparling-Fowl of

Latham and other British ornithologists. Subsequent and more correct observation has served to rectify this perplexing error, and remove another stumbling-block from the paths of ornithology. The northern regions of Europe and America are the native and habitual haunts of this fine bird. On the approach of winter it visits, in its migration southwards, the northern districts of our own island, and, more especially, the inland waters of Germany and Holland. Fishes, the smaller *crustacea*, and molluscous animals, constitute its principal food. The female is said to lay from twelve to fourteen cream-coloured eggs: but of its nidification little is, at present, known. Mr. Gould's plate represents a male and female, two thirds of the natural size, and most admirably executed.

PLATE V.—The Whinchat,—*Saxicola rubetra*, *Rubetra migratoria*, Blyth,—*Motacilla rubetra*, Linnæus,—*Sylvia rubetra*, Latham,—Traquet Tarier, F.,—Braunkehliger Steinschmatger, G. A summer-visitant of the British islands; hence the propriety of the specific designation *migratoria*, by which it is now distinguished from the only other British species of the genus, the Stone-Chat,—*R. rubicola*. It is, however, obvious that, whenever practicable, the specific name should be drawn, not from the habits of the bird unrecognizable by the organs of touch or vision, but from some permanent and unerring peculiarity of exterior configuration or colouring, which the eye of the observer can at once discriminate. In what points, independently of its migratory habits, does the present subject of our discussion differ from its congener, the Stone-Chat? Principally in the broad streak, or band, of pure-white, which passes from the base of the bill, above the eye, nearly to the occiput. Why then not, at once, designate the bird *Rubetra albi-striata*; or give it any other more appropriate specific name indicative of this visible and unerring peculiarity of character? The plate of Mr. Gould, representing a male and female, of the adult age, is executed with his wonted elegance, talent, and felicity.

PLATE VI.—The Missel-thrush, *Turdus viscivorus*,—Merle Draine, F.,—Tordo maggiore, It.,—Mistel-drossel, G. This bird, the largest of the European *Turdi*, is principally distinguished, from its congeners, by the grey colour of the space which exists between the eye and bill; and instead of deriving its specific designa-

tion from habits neither universally practicable or prevalent, nor peculiar to the bird, should be distinguished by some aptly-constructed epithet, expressive of this character. *Temporo-griseus*, although not sufficiently precise, is the best which, at present, suggests itself to our mind. The absurdity of the ancient term is self-evident. Confine a cock-sparrow, and place him upon what the French physicians, whimsically enough, call *diète*—in plain English, put him on short commons—for a couple of days; and take our word for it, he will devour *misseltoe* berries as fast as you can procure, or his little stomach convert, them, with any *storm-cock* in his Majesty's dominions. The Missel-Thrush of Mr. Gould, although boldly and correctly drawn, is not quite so softly and harmoniously coloured as many of the figures displayed in the preceding plates.

PLATE VII.—The Smew, *Mergus albellus*,—Harle Piette, *Fr.*,—*Mergo Oca minore*, *It.*,—Weisser Sager, *G.* The male of this species, the smallest of the genus, is distinguished by its white pendant crest. The female, to which the young male, of the first year, exhibits a close resemblance, was once supposed to form a distinct genus, and entitled the Lough Diver,—*Mergus minutus*. Anatomical inspection of the trachea of the young, shewed its identity of structure with that of the adult male, and exposed the fallacy of the opinion previously entertained. In this bird, the windpipe displays a contraction immediately below the glottis; and then, gradually enlarging to the middle of its course, preserves nearly the same diameter to its termination in the lower larynx, which is proportionately smaller than in the other species of the *Mergus* genus, and very differently constructed. The Smew, or White Nun, is a winter-visitant of the southern and eastern coasts of Britain, of the inland rivers and the waters of the fenny districts. The adult male, however, is rarely seen; and the female has never yet been known to breed, among us. She is said to lay from eight to twelve whitish eggs. Stephens has, without sufficient reason, removed the Smew from the *Mergus* to a different genus. Mr. Gould's figures, representing both male and female, two thirds of the natural size, are finely executed.

PLATE VIII.—The Wryneck,—*Yunx torquilla* (*Torquilla striata*, of modern systematists),—Torcol ordinaire, *Fr.*,—Torcicollo,

It.,—Wendehals, G. The male and female of this elegant species, one of the earliest of our summer-visitants, and the constant precursor of the joyous and welcome Cuckoo, are here represented with extraordinary spirit and effect. The female is seen emerging from the hollow of a tree, in which she may be supposed to have deposited her pure-white eggs. The only defect of the figures is, that they are considerably larger than natural. The principal food of this interesting bird—hence frequently termed the *Emmet* Wryneck—is the ant and its larva; which are seized, with great velocity and unerring aim, by the protrusion of its long and extensile tongue. It is nearly allied, in structure and habits, to the Woodpecker genus.

PLATE IX.—The Magpie,—*Pica caudata* (*Corvus Pica*, of Linæus,—*Pica melanoleuca*, of later ornithologists),—la Pie, *Fr.*,—Gazzera commune, *It.*,—Gartengrahe, G. Of this most beautiful of all the family of the British, or even European, *Corvidæ*, we have yet met with but one delineation, whether graven or drawn, true to the life. Turn, gentle reader, to the ninety-second page of the first volume of good old Bewick; and there you will behold the bold, impudent, and mischievous Pie, with tail erect, in all his glory. The representations of the bird by Lewin, Donovan, and Selby, are perfect failures. In the forlorn, sombre, sedate, and melancholy figure of Werner, we recognize, only by the aid of the appended type, the sprightly friend and associate of our school-boy days. Nor even with the Magpie of Mr. Gould, powerfully and splendidly coloured as it is, are we quite satisfied. The attitude of the bird is not natural; and there is some striking defect, more readily to be appreciated than particularized, in the form and colouring of the head. The expression of the bold, and bright, and wicked eye is, however, admirably given. *Pica*, although clearly distinguished by the illustrious Ray, having only of late been formally severed from the *Corvus* genus, we here present a sketch of the generic characters, as traced by Selby and Gould. *Beak* strong, compressed laterally, slightly arched, and hooked at the tip. *Nostrils* basal, open, protected by a covering of bristly feathers directed forwards. *Feet* with three toes before and one behind, entirely divided. *Tarsus* longer than the middle toe. *Wings* rounded.

First quill-feather very short ; fourth and fifth longest. *Tail* long, graduated ; its two middle feathers projecting beyond the rest. The “saucy madge” constitutes, at present, the only European species of the new genus. The specific designation, *caudata*, is, obviously inapposite ; as all the exotic congeners of our favourite Pie, we presume, sport tails. *Melanoleuca* will be also, probably, objected to, by the more fastidious reformer, on the score of its Greek origin. Why, then, not substitute for it an equally expressive and more appropriate epithet derived from the Latin,—*Pica nigro-alba*, or *nigralba*, the black and white Pie.

PLATE X.—Comprehends two figures representing different species of the Red-legged Partridge. These, with the Guernsey Partridge, *Perdix rufa*, and another nearly-allied species from the Himalaya mountains, present, in Mr. Gould’s opinion, sufficient differences of character to justify their separation from the Linnean genus *Perdix*,—of which our common *P. cinerea* affords a familiar illustration,—and the consequent institution of a new genus. In this view of the subject, we are disposed to concur ; and would recommend the adoption of the very apposite term *Rufipes*, or Redfoot,—see page 206 of our present number,—as designative of this newly established and beautiful household of the distinguished family of the *Rasores*.

The *first figure* in the plate is the Barbary Partridge,—*P. petrosa*, Latham,—*P. rubra Barbarica*, Brisson,—*Tetrao petrosus*, Gmelin,—*Perdix Gambia*, la *P. rouge de Barbarie*, Fr.,—*Feldhuhn aus Barbarey*, G. This bird, resembling, in its habits, the Guernsey Partridge, inhabits not only, as its popular designation indicates, the coast of Barbary, but the European shores, and the islands, of the Mediterranean Sea. It is specifically distinguished from its congeners by the deep-chestnut stripe which, commencing at the root of the bill, passes over the crown of the head to the nape ; and by a rufous-brown collar which, thickly spotted with white points, surrounds the neck. Hence, its proper designation would obviously be the collared Redfoot,—*Rufipes torquata*.

The Greek Partridge,—*P. saxatilis*, Meyer,—*P. Græca*, Brisson,—*Perdix Bartavelle*, Fr.,—*Pernice maggiore*, It.,—das *Steinfeld Huhn*, G.,—forms the elegant subject of the *second figure*. It

is a much rarer bird than either of the other two European Red-foots; inhabits the Archipelago, Turkey, Italy, Switzerland, and the Tyrol; and is principally distinguished by the *white colour* of the cheeks and neck, bounded by a black band which, passing on each side, from the beak across the eye, meets upon the chest. *Rufipes albicollis* would, consequently, form its appropriate designation. The male Greek Partridge measures, in extreme length, from thirteen to fifteen inches; the Barbary—, from twelve to thirteen. According to the admirable description of Temminck,—*Manuel d'Ornithologie*, v. ii, p. 484—486,—both species occasionally exhibit considerable varieties of plumage.

The female of both may be readily recognized by inferiority of size; less vivid colouring of the plumage; and by the absence of the short blunt spur with which the tarsus of the male is invariably furnished. The Barbary, or Collared, lays fifteen eggs, of a dull-yellow, covered with minute specks of a greenish-yellow or olive colour: the Greek, or White-throated, from fifteen to twenty, yellowish-white, with indistinct markings of reddish-yellow. The figures in this plate are drawn with great fidelity and spirit; but the colouring of the feathers, on the sides and flanks, is rather hard.

PLATE XI.—The Land Rail, or Corn Crake,—*Gallinula crex*, *Rallus crex*, Linnaeus,—*Ortygometra crex*, Flemming,—*Crex pratensis*, Bechstein,—Rale, ou Poule, d'Eau de Genet, *Fr.*—Wiesenkarrer, *G.* This migratory bird, whose harsh and monotonous cry becomes delightful from its associations, in the memory, with the balmy and incense-breathing nights of summer, is, by modern ornithologists, separated from *Gallinula*; with which we are surprized to find it still associated by Mr. Gould. The genus *Crex*, of which it is now taken to constitute the type, contains two other British species, *C. porzana* and *olivaria*: the little Crake, *C. pusilla*, of Selby, having been transferred, by Dr. Leach, to the new genus, *Zapornia*. For a description of the generic characters of *Crex*, see Selby's *Illustrations*, v. ii., page 174. The Crakes, according to this excellent writer, form a connecting link between the *Rails* and *Gallinules*: distinguished, from the *former*, “by a shorter, thicker, and more angular bill;” from the *latter*, by the defect of extension of the lateral membrane bordering the inferior surface of the toes,

and of the naked skin, or plate, which occupies the frontal region of the *Gallinule*.

The specific term, *pratensis*, as indicative of circumstances of habitation, in which it does not materially differ from the other species of *Crex*, is not correctly applicable to the Land Rail. *Crepitans* or *strepera*, although probably not the most appropriate that might be devised, would be far more eligible than *pratensis*. Mr. Gould's figure, with all its excellence of colouring, is clumsily drawn, defective in the outline of the head and neck, and by no means so strikingly characteristic of the crouching and timorous bird as the coarse wood-cut of Bewick, vol. ii., page 130.

PLATE XII.—Is peculiarly interesting and important. It exhibits all the British species belonging to the genus *Sylvia*, as now constituted; and clearly illustrates the characters by which three birds, exceedingly difficult of discrimination, and hitherto frequently confounded, even by the experienced ornithologist, may at once be distinguished from each other.

The *First* of these is the Willow Wren, or Yellow Wren,—*Sylvia trochilus* (*Motacilla trochilus*, Linnæus),—Bec-fin Pouillot, ou le Pouillot, *Fr.*,—Fitis Sanger, *G.* *Specific Characters*, according to Gould: whole of the upper surface, greenish-olive; a faint-yellow streak above the eye; throat and breast slightly tinged with yellow; *belly yellowish-white*; under tail-coverts yellow; *legs dull flesh-colour*; *wings covering about one third of the tail*. Selby, in his description of this species,—*Illustrations*, v. i., p. 226,—has erroneously referred to the succeeding species in Temminck's work.

Second Figure.—The Chiff-Chaff, or Lesser Pettychaps,—*Sylvia* (*Motacilla*) *hippolaïs*,—Fauvette de Roseaux, Petite Fauvette à poitrine jaune, *Fr.*,—Gelebauchiger Sanger, *G.* *Spec. Char.*: inferior in size to the preceding; eye-streak more faint; plumage less finely tinged with yellow; *legs of an umber or blackish-brown colour*. The Least Willow Wren, of Bewick, probably belongs to this species.

Third Figure.—The Wood Wren (Larger Willow Wren, White, Yellow Willow Wren, Bewick),—*Sylvia sibilatrix*,—*sylvicola*, Latham,—le Bec-fin siffleur, *Fr.*,—Grüner Sanger, *G.* *Spec. Char.*: *Wing extending nearly two thirds of the length of the tail*; eye-

streak bright-yellow ; wing-feathers edged with yellow ; *under surface silvery-white*. From the preceding outline, it appears that the *third* species, *S. sibilatrix*, is principally distinguished, from the *first* and *second*, by A. the greater length of wing ; B. the bright-yellow eye-streak ; and C. the silvery-white of the abdominal plumage : and the *second*, *S. hippolais*, from the *first*, *S. trochilus*, by A. the inferiority of size ; B. fainter eye-streak ; and C. the darker colour of the legs. The legs of the Wood Wren exhibit, like those of the Yellow Wren, a pale yellowish-brown hue.

All these species are insectivorous and migratory ; and visit the British islands only in the spring and summer. The Chiff-Chaff, so termed from its monotonous song, answering, in sound, to that name, arrives, first, in March ; the Yellow Wren, about the beginning of April ; the Wood Wren, a few days after. They are all ground-builders. The nest, composed of dead leaves and grass, is, by the two first birds, profusely lined with *feathers* ; by the Wood Wren, invariably with *fine grass and hair*. The eggs, from five to seven in number, of a white colour, speckled with purplish-red, or reddish-brown, more thickly at the larger end than elsewhere, are not readily traceable to their respective species. The spots of the Chiff-Chaff's egg are, ordinarily, darker in hue and fewer in number, than those on the Yellow Wren's. For the characters of the reformed genus, see Selby's *Illustrations*, v. i., p. 221.

PLATE XIII.—The Eared Grebe,—*Podiceps auritus*. Five European and British species of *Podiceps* are described by Temminck and Selby. Of these, the subject of the present admirably-executed plate, comprizing figures of a young and an adult male, is one of the most rare and beautiful. *P. auritus* (*Colymbus auritus*, of Linnæus and Brisson),—Grebe Oreillard, *Fr.*,—Colimbo Suasso Turco, *It.*,—Geörhter oder ohren Steissfuss, *G.*,—is principally distinguished from its nearly-allied congener, *P. cornutus*, by the absence of the chestnut-coloured neck, and the rufous stripe which passes from the base of the bill, through the eye, to the occiput. The young, destitute of the long, silky, and radiating ear-feathers, from which the adult bird has acquired its specific designation, and of an uniform grey colour above, so closely resembles the young of *cornutus* that they have been confounded together, and regarded, by

dusky ornithologists like Pennant, as a distinct species, under the title of *P. obscurus*, or Dusky Grebe.

PLATE XIV.—The Grey Wagtail,—*Motacilla boarula*,—*melanops*,—*sulphurea*, of older authors, *cinerea*, of the moderns),—*Bergeronnette jaune*, *Fr.*,—*Gutrettola da Codizincola*, *It.*;—of which we have here two exquisitely-coloured figures, illustrative of the appearance of the bird in its summer and winter plumage. It strikingly resembles, in its latter condition, the Yellow Wagtail, now separated from it, by removal of the last to the genus Oat-ear, *Budytes*. In summer, both sexes assume, with a brighter plumage, a circumscribed patch of black,—not so intense in the female as the male,—upon the throat. After the autumnal moult, the black disappearing, is replaced by a yellowish-grey tinge. Yet, even in this state, the species may be distinguished from its former congener, by a more “slender and symmetrical” figure, the “grey colour of the back, and bright-sulphur hue of the rump.” The Grey Wagtail, regarded as a British bird, is an *intra-insular* vagrant; not wandering, even in winter, beyond the precincts of our own island. It migrates to its northern breeding-places in April; and, having achieved the important process of incubation, returns, about October, to the more genial regions of the south.

PLATE XV.—The Golden-Eye,—*Clangula vulgaris*. The male and female of this interesting species, the Golden-eyed Garrot,—*Clangula bimaculata*,—*chrysophthalma*, of modern ornithologists,—(*Anas clangula*, of Linnæus),—*Canard Garrot*, *Fr.*,—*Anatra Canone Domenicano*, *It.*,—*die Schelle Ente*, *G.*,—are here depicted, two thirds of the natural size, with uncommon fidelity of outline, and in an admirable style of colouring. Besides this, there is only one other species, *C. histrionica*, of the newly-constituted genus. It is principally distinguished, from its congener, by the existence of a large white spot at the base of the bill, on each side; and has hence obtained its specific designation, *bimaculata*, or two-spotted. The female differs widely in plumage from the male; and was once referred, with the immature bird of that sex, to a distinct genus, under the title of *Anas Glaucion*, or Morillon. Anatomical inspection of the trachea, which is very singularly constituted, and exhibits, in the young and the adult male, perfect identity of structure, has

served to rectify the error. This structure, of which even Temminck's description fails to convey a correct idea, is well illustrated by Latham's drawing,—figures 1 and 2,—in plate xv. of vol. iv. of *The Linnean Transactions*.

PLATE XVI.—The Grey-headed Green Woodpecker,—*Picus canus*,—(*P. viridis Norvegicus*,—*viridicanus*,—*caniceps*, of various authors),—*Pic cendré Fr.*,—*Piechio verde di Norvegia, It.*,—*der Grauköpfige oder Grungraue Specht, G.*,—has very frequently been confounded with *Picus viridis*, the common Green Woodpecker of Europe ; but may be distinguished from that bird by its rather smaller size, and the *grey colour of the head* ; the red mark on the top of which is more circumscribed, while in the female it is entirely wanting. It inhabits the north of Europe, and,—if Temminck's assertion, the accuracy of which is, however, questioned by Mr. Gould, may be relied upon,—the corresponding regions of America. The figures of a male and female, of the natural size, are here admirably delineated. The designation, *viridicanus*, applied to this species, is, in our opinion, by far the most appropriate.

PLATE XVII.—The Sardinian Warbler,—*Curruca melanocephala*,—*Bec-fin Melanocéphale, Fr.*,—is here represented in two figures, male and female, of the natural size. It is an inhabitant of Spain, Sardinia, and the Neapolitan dominions : insectivorous, and nearly-allied to our own melodious Black-cap. The head of the male is deep-black : that of the female, dark leaden-grey. The nest is formed in bushes near the ground ; eggs, five in number, yellowish-white, with dark spots. An inspection of this charming plate confirms the impression which we were previously disposed to entertain, that, if possible, the smaller species of birds are more exquisitely delineated than the larger, by Mr. Gould. The species is referred to the genus *Sylvia*, by Latham ; by Gmelin, to *Motacilla*.

PLATE XVIII.—The Golden Plover,—*Charadrius pluvialis*,—*Pluvier doré, Fr.*,—*Piviere dorato, It.*,—*Goldregenpfeifer, G.* The Latin term, *Pluvialis*, is now employed as designative of the Plover genus ; and five British species,—see p. 208 of our present number,—are described as belonging to it. The subject of the present plate is the Green Plover—*Pl. viridis*—of modern ornithologists. The extraordinary change of plumage which the bird exhibits in the

summer and winter seasons, is admirably illustrated in the two figures of the adult male, which Mr. Gould has here delineated with his wonted grace and fidelity.

PLATE XIX.—The Great Black Woodpecker,—*Picus Martius*, (—*niger*, Brisson, — *maximus*, Ray),—Pic noir, *F.*,—Piechio Corvo, *It.*,—Schwarzspecht, *G.* This rare and beautiful bird, a native of north Europe, has been repeatedly killed in our own island ; and at length, however tardily, been recognized, by Selby, as a British bird. It is the largest and most powerful of the European *Picidæ*. The prevailing colour of the body is deep-black ; the crown of the head in the male—the occiput only in the female—“ bright arterial blood-red.” The figure of the latter, as partially represented by Mr. Gould, is excellent ; that of the male, in our view, rather too angular and *scraggy* about the head and neck. *Nigro-coccineus* would form an appropriate specific designation for this bird.

PLATE XX.—The Lesser Grey Shrike,—*Collurio minor*,—(*Lanius minor*, Linnæus),—Pie-Grieche à Poitrine Rose (Rose-breasted Shrike) of Temminck,—*Velia Genezia Mezzana*, *It.*,—Grauer Vurger, oder Schwartzstieniger, *G.* The modern genus, *Collurio*, is distinguished from *Lanius* by the graduated tail, and short rounded wing, of the species composing it. Our present subject is, however, regarded, by Gould, as rather forming a link between the two genera, than belonging strictly to either. In size, it is inferior to *Lanius excubitor* ; which it closely resembles in habits and general character of plumage. For the amusement and information of the reader, who may not have access to the *Manuel* of Temminck, we shall transcribe, from that excellent work, the description of the bird. It will afford a fair example of the Dutchman’s style, and be found to correspond well with the figures, as delineated by Gould ; and by Werner in the seventh plate of the seventh *Livraison* of his *Atlas des Oiseaux d’Europe*.

“ Forehead, region of the eyes and ears black ; occiput, nape, and back, ash-grey ; throat white ; breast and flanks, of a rose-red ; wings black ; on the quills, only a white mark ; first tail-feather white ; on the second, black along the stem ; on the third, a great black spot, terminated with white ; on the fourth, a more considerable black spot, with an extremity of pure white ; the four middle

feathers perfectly black. Length, eight inches. The *female* has the rose-colour less bright, the black band of the forehead and ears more narrow; this band and the black of the wings verging more to brown.

"The *young of the year*, and *both sexes* after the autumnal moult, do not exhibit the black frontal band. This part is, in winter, of a dull ash-grey; after the spring-moult, all the individuals have the black stripe, and the rose-colour of the breast is more vivid. The young of the year are, moreover, distinguished by the dull ash-grey of the superior parts, all the feathers of which are fringed, and by the dull-white of the lower parts.

"*Inhabits* the Archipelago, Turkey, Italy, Spain, and sometimes visits the north of Europe, as far as Russia; breeds also in some provinces of France and Germany, where the species is little diffused: very rare in Holland.

"*Food*: Phalænæ, Scarabæi, moles, crickets, and the smaller birds. *Propagation*. Builds on forest-trees, and in bushes; lays six oblong eggs of a whitish-green colour, which have, towards the centre, a zone formed by minute points of an olive-grey."

Here our examination of the *First Part* of Mr. Gould's work terminates. A brief analysis, or recapitulation, of its contents may not be destitute of interest and utility to the ornithological student. The *twenty* plates of which it consists, comprehend representations of thirty-five figures, and twenty-three species, of birds, belonging to the seventeen following genera: *Alcedo*, *Anas* (*Clangula*), *Charadrius* (*Pluvialis*), *Corvus* (*Pica*), *Curruca*, *Falco*, *Gallinula* (*Crex*), *Lanius* (*Collurio*), *Mergus*, *Motacilla*, *Perdix* (*Rufipes*), *Picus*, *Podiceps*, *Saxicola* (*Rubetra*), *Sylvia*, *Turdus*, and *Yunx* (*Torquilla*). Eighteen of the plates represent one species each; and of these, six, only one figure of the adult; and twelve, two figures: ten of the twelve exhibiting sexual, and the remaining two, seasonal—diversities of plumage. Of the *two* remaining plates, one illustrates two, and the other, three—species. Seventeen of the species figured are British, and the remaining six, continental—birds. The Analysis of Mr. Gould's work will be resumed in our next number.

[During the composition of the preceding Analytical Sketch, two additional publications, involving the subject of Ornithology, and consequently

requiring some notice from us, have been published; and a third which had previously escaped, has since recurred to, our recollection. The *First* of these is a *Familiar History of Birds*, by the Rev. Edward Stanley, M. A., F. L. S., in two neat duodecimo volumes,—an interesting and useful little work; of which we shall present a brief analysis in our next number: the *Second*, *The Edinburgh Journal of Natural History*, accompanied by an English translation of *The Animal Kingdom*, of Cuvier, equally remarkable for its cheapness and excellence, by Captain Thomas Brown: and *Third*, *The Zoologist's Teat-Book*, in two duodecimo volumes, illustrated with 1200 accurate figures of animals, by the same zealous and enlightened author.

In a very lady-like remonstrance, addressed to the Editor of *The Analyst*, Mrs. Perrott, authoress of a *SELECTION of British Birds*, complains that the writer of the *Retrospect* contained in our last Number, has been guilty of an act of misrepresentation and injustice with respect to that work. We there stated that Mrs. Perrott's "SELECTIONS" were destitute of "plan or order." This she denies; avowing her intention to supply an index of the species, and a scientific arrangement of the plates, at the close of the work; and referring to her Prospectus for proof that such was her original design. That Prospectus we had not seen. Partly, then, to this act of negligence in us, and partly to the injudicious choice of the term, *Selections*, by Mrs. Perrott,—a most unfortunate title, truly, for a professedly *systematic* work,—may be attributed the error into which the unlucky "Scribe" has been unwittingly betrayed:—an error, however, for which he is solicitous to make every reparation which a candid and honourable mind can, on the one hand, express; or, on the other, require.

Birmingham, December 7th, 1835.

P.

NOTITIÆ BOTANICÆ.

By G. B. KNOWLES, Esq., M. R. C. S., F. L. S., &c.

Lecturer on Botany at the Birmingham School of Medicine, and Honorary Secretary of the Birmingham Botanical and Horticultural Society.

THE following observations, made during an excursion to the Isle of Wight, in the summer of 1832, may possibly prove not unacceptable to botanists who may be induced to visit that beautiful island.

In travelling by coach from hence to Southampton, I was necessarily obliged to submit to the mortification so frequently experienced by the botanist, of seeing rarities by the way, without being able to gather them. I could not but remark, however, the total

disappearance of *Digitalis purpurea*, as soon as we entered upon a chalky or lime-stone district ; while, at the same time, *Pastinaca sativa*, which had not before shewn itself, became abundant.

Having to remain a few hours at Oxford, I was directed by Mr. Baxter, the indefatigable curator of the Botanic Garden, to a spot about half a mile from the city, where *Lythrum Hyssopifolium* grows in considerable quantities, and of which I gathered fine specimens. My stay at Southampton was too short to enable me to make any addition to my collection, with the exception of *Sinapis tenuifolius*, which grows plentifully on walls in the town. In the neighbourhood of Ryde and Cowes, may be found many of the plants that are common to most of the British coasts ; such as *Eryngium Maritimum*, *Glaucium luteum*, *Cakile maritima*, *Salsola kali*, *Plantago maritima*, *Statice limonium*, &c. In a wood near Sea-view, about two miles from Ryde, I met, for the first time, with *Rubia peregrina*, which, from its appearance, might readily be mistaken, by the young botanist, for a *Galium*. *Orchis pyramidalis* was, also, growing luxuriantly in the same place. *Iris foetidissima* is most abundant in every part of the island ; as is, also, *Scolopendrium vulgare*, which may be seen under almost every hedge. On a bank by the side of the road leading from Cowes to Newport, not a mile from the former place, I gathered *Linaria repens*, a plant found chiefly in the south of England. *Linaria spuria* and *Linaria Elatine*, also, grow in many parts of the island : my specimens were gathered in the garden of the Ventnor Hotel, where they had sprung up as common weeds.

The neighbourhood of Ventnor, and indeed the whole line of the Undercliff, is rich in botanical rarities. The Undercliff extends along the coast for about six miles, and, with its towering rocks, its romantic villas, and its glorious sea-views, presents such a combination of beauty and grandeur as is scarcely to be paralleled. I cannot avoid offering a few remarks, *en passant*, upon this singular tract of country which may be regarded as a kind of terrace, on the south east coast, and varying from a quarter to half a mile in breadth. It is sufficiently elevated above the level of the sea to exempt it, in a great measure, from sea fogs ; while, at the same time, it is so effectually protected from winds, by the rocky barrier and lofty downs, by which it is bounded on the north, as to offer, perhaps, a

more genial climate than can be found in any other part of this kingdom.

In proof of this assertion, it may be stated that many exotic plants which, in other parts of the island, require the protection of the greenhouse, flourish there in the open air, and even survive the winter. Myrtles and geraniums may be mentioned as growing there most luxuriantly; but more particularly *Hydrangea Hortensis*, which may frequently be seen in cottage gardens, from six to eight feet high, and completely covered with its large heads of blossoms. From these circumstances, as well as from personal observation, I have no hesitation in saying that the Undercliffe offers a more advantageous residence to the consumptive invalid, during the months of winter and early spring, than any other part of the British coast. My opinion on this subject is fully confirmed by Dr. James Clark, in his admirable work *On Climate*, who thus expresses himself:—"Indeed, it is matter of surprise to me, after having fully examined this favoured spot, that the advantages which it possesses in so eminent a degree, in point of shelter and exposition, should have been so long overlooked in a country like this, whose inhabitants, during the last century, have been traversing half the globe in search of climate." I must return, however, from this digression, and proceed to notice the habitats of a few of the plants that are found in this interesting district. *Chlora perfoliata*, with its elegant panicles of star-like flowers, adorns the road-side between Shanklin and Saint Lawrence; and near the diminutive church of the latter village, may be seen *Mentha rotundifolia* growing in profusion. *Rubia peregrina*, *Inula Helenium*, and *Hypericum androsæmum*, are seen plentifully between Luccomb and Bonchurch; and under the cliff at Luccomb, *Lathyrus sylvestris* grows in beautiful luxuriance, and in great profusion, as stated by Dillwyn and Turner, in their *Botanist's Guide*. It is, indeed, somewhat remarkable that the habitats of plants in the Isle of Wight should, for the most part, be found, even now, so correct in a work which has been published full thirty years. To this imperfect list of plants I will only add one more, which, on account of its singularity, ought not to be omitted; it is a double variety of *Potentilla repens*, which, with its little rose-like blossoms, is truly beautiful: it grows plentifully and, apparently, wild in a wood not far from Norris Castle.

AN OUTLINE OF BRITISH CATERPILLARS.

No. I.

Genus, VANESSA.

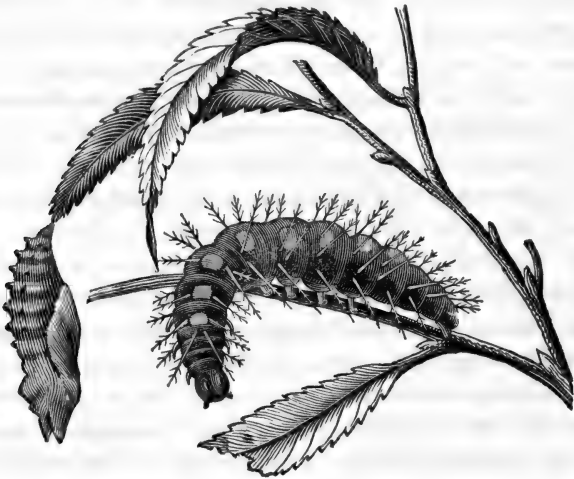
IN a former Volume of *The Analyst*, we gave a slight notice of the new and valuable work of Messrs. Boisduval, Rambur, and Graslin, on the *Caterpillars of Europe*.* At the close of that Review, a promise was held out to the entomological student, that we would revert to the important subject, and occasionally present a sketch of the various *Lepidoptera*, in this active and interesting stage of their progress from the ovum to the adult or imago state. Such promise we shall now redeem; taking, as by far the most minute and generally correct which we have yet met with, the descriptions of the different Caterpillars from the zealous and enlightened *French* entomologists, to whose unrivalled work we have just adverted. In reading these descriptions, some allowance must obviously be made for the diversities of colouring which may result either from the accidental variations, occasionally exhibited by all organized productions, or from differences of food and climate.

The beautiful genus, *Vanessa*, belonging to the Family of the *Nymphalidæ* of modern Entomologists, is, as regards the British species, divided, by the accurate and scientific Curtis, into three Sections, or Sub-genera; respectively characterized by the figure of the wings of the adult insects composing it, and the habits of their Caterpillars. Preferring the arrangement of Curtis to every other yet published, we shall take the liberty of almost literally transcribing it from his admirable *Illustrations of the Genera of British Insects*.†

* See *Analyst*, vol. ii., p. 53.

† *British Entomology*, vol. ii., pl. 96. All the species of the modern Lepidopterous genus, *Vanessa*, were comprehended, by Linnæus, in his great genus, *Papilio*; the principal characteristic distinction of which was the clubbed antenna. Stephens,—*Systematic Catalogue of British Insects*, Part ii., p. 11,—has severed from the genus, as constructed by Curtis, the 7th species; and, placing it in a new genus, under the title of *Cynthia Cardui*, enumerated the *Hampstediensis*, (Hampstead-eye, of Albin),—probably a mere variety of *V. cardui*,—as a distinct species. In his projects of entomological innovation, rather than of reform, this distinguished author has, however, been outstripped by Professor Rennie; who, in addition to *Cynthia*, has formed two new genera, *Comma* and *Ammiralis*, respectively including the *C. album* and *Atalanta*, of Curtis. See *Conspectus of Butterflies*, etc., p. 8.

The Chrysalis, or Pupa, of all the species of the genus are, it may be observed, of an angular figure ; and attached, as will be seen in the accompanying wood-cut, to the various bodies from which they are suspended, by the tail.*



* These figures of *V. antiopa*, in its various states, were executed, under our own inspection, by a Birmingham artist, named Royle; and are his first attempt at the representation of entomological subjects on wood. We insert them here, as illustrating the figure of the wings characteristic of Mr. Curtis' second Sub-genus, and the general aspect of the Caterpillar and Chrysalis of the genus. For the future, any iconographical illustrations which we may give on this subject, will be either drawn from nature, or borrowed from the admirable engravings of Messrs. Boisduval, Rambur, and Graslin.

Genus, *VANESSA*.

A. *Wings irregularly lobed. Caterpillars gregarious, with bituberculated heads.*

Species 1. *Vanessa C. album*, The Comma.

B. *Wings angulated. Caterpillars gregarious.*

2. *Urticæ*, The Lesser Tortoise-shell.

3. *Polychloros*, The Greater Tortoise-shell.

4. *Antiopa*. The Willow, or Camberwell Beauty.

5. *Io*. The Peacock.

C. *Inferior wings rounded and indented. Caterpillars solitary.*

6. *Atalanta*. The Admirable.

7. *Cardui*. The Painted Lady.

Of the Caterpillars of these seven British species, belonging to the genus *Vanessa*, our limits will allow us to trace only a description of the following three. In a future number, we shall present figures of the perfect insect; illustrative of the two remaining subgenera of *Vanessa*, and terminate our list of the caterpillars by a description of the other four. The first two of the following belong to the 2nd —, and the third to the 3rd Sub-genus, as arranged by Mr. Curtis.

Vanessa Urticæ. Boisduval, *Nymphalides*, pl. 1. fig. 4, 5, and 6; —Donovan, v. ii., pl. 55. *Caterpillar*: blackish, minutely sprinkled with yellow. Each ring exhibiting a circular row of seven branched spines; except the 2nd and 3rd, which have but four, and the 1st and last completely destitute of them. Dorsal spines blackish, brighter at their extremity; those of the two lateral rows slightly yellow. The body exhibiting, in addition, some minute, almost imperceptible, greyish, scattered hairs. On the back, a dorsal streak of lemon-yellow, varying in breadth; more or less well defined, and divided longitudinally by a black line. On the sides, another streak, of like colour, frequently double, and enclosing the blackish, minute, and scarcely visible stigmata. Head black, slightly hollowed and rough. Inferior surface of the body yellowish-grey, or livid yellowish-green. Scaly feet black; the others greenish-grey. A ventral streak, of dark-green colour, and broken, ordinarily existing between the membranous feet. In some individuals, the yellow bands are very distinct; and the blackish interval, separating

them, copiously spotted with yellow. In others, they are narrow, and faintly marked. The colour of these bands varies, also, from a fine lemon- to a greenish-yellow.

This *caterpillar*, common throughout the greater part of Europe, lives, in societies, upon the various species of the nettle, as *Urtica dioica*, *urens*, and *pilulifera*. In early age, it exhibits a blackish or blackish-grey hue: assuming, after the second moult, the outline which it retains to the period of metamorphosis. These caterpillars, when upon the eve of taking on the chrysalid form, disperse; and, creeping along trees or walls, suspend themselves to undergo the wonted transformation. Sometimes, although rarely, they attach themselves to the plant on which they have previously fed. They are found from May to the end of September.

The *Chrysalis* is ordinarily of a slight violet ash-grey, or flesh-grey colour; often marked with golden or silvery spots on its anterior part. Dorsal points conical and strongly marked. Sometimes, it is met with, under the coping of walls, completely of a splendid golden-yellow colour. In this case, however, the chrysalis has invariably been perforated by an insect of the *Ichneumon*, or rather of the *Chalcis*, tribe. The perfect insect is evolved at the expiration of from fifteen to eighteen days.

Vanessa Io. Boisduval, *Nymphalides*, pl. i., fig. 1, 2, and 3; Donovan, vol. vi., pl. 206.—*Caterpillar*: deep velvet-black, punctated with white. Each ring, except the first, furnished with six longish, black spines, rather hairy than branched. The first, more slender than the rest, and destitute altogether of spines. Head, and scaly feet, of a shining-black. Membranous feet, reddish-yellow, bordering on ferrugineous. Stigmata, blackish and scarcely visible. Exists, in numerous societies, over the greater part of Europe, during July and September, upon *Urtica dioica*, and *pilulifera*, and, sometimes, upon *Humulus lupulus*. When going into the chrysalid state, the caterpillar quits its place of nativity, and suspends itself to the leaves of the nettle, or other adjacent plant.

The *Chrysalis* is often of a golden-yellow, sometimes of greyish, tinted with violet, colour; and marked with silvery spots on the thorax. Somewhat more elongated, in figure, than that of *V. urticae*: with the dorsal points more prominent; the head more dis-

tinctly bifid; and the abdomen more convex. Perfect Insect disclosed in eighteen days, or later, according to the peculiarity of site.

Vanessa Atalanta. Boisduval, *Nymphalides*, pl. ii.; Donovan, v. viii., pl. 260:—*Caterpillar*: thick, shortened; ordinarily of a dull yellowish-grey, above; with a sinuous, sulphur-yellow, lateral streak placed below the stigmata. Each ring, except the first two, bearing seven shortish, circularly ranged, yellow or reddish-yellow, branched spines: those of the more anterior rings usually blackish at the extremity. Head black, rugose, slightly hollowed out above. Body, below, yellowish-grey or blackish; membranous feet violet; the scaly feet, and stigmata, black. This caterpillar exhibits almost countless diversities of colour. The most common variety is violet-black, sprinkled with whitish points: spines, pale-yellow, and slightly ferrugineous at the base. Dorsal streak, of deeper colour than ordinary: the lateral, rather broad, and pale-yellow. Below, violet-black, with paler membranous feet. At an early age, body, and most of the spines, blackish: yellow streak, broken; and superior part of first ring, sometimes yellowish. It lives, in Europe, upon *Urtica dioica*, *urens*, and *pilulifera*, almost solitarily: and conceals itself in one or more leaves of the plant, which it unites by the aid of silken threads. Hence, difficult of discovery by persons unacquainted with its peculiar habits. The leaves of the nettle, thus sewed together, may readily be mistaken for the work of an *Aranea* or *Botys*. In a short time, having attained the full size, the Caterpillar quits its place of concealment; and attaches itself to the cornice of a wall, or the trunk of a tree, to assume the chrysalid state. Sometimes, however, it undergoes this metamorphosis within the leaf by which it has been previously sheltered. Most commonly, found from August to the commencement of October.

The *Chrysalis* is large, somewhat shortened in figure, and less angular than that of its congeners. Colour, grey tinged with white, or pale violet-grey, with a few golden spots. The perfect Insect is evolved in from twelve to fifteen days.

P.

Birmingham, December 12th, 1835.

[The caterpillars of some other genus, or genera, of British *Lepidoptera* will be examined in our next Number.]

CORRESPONDENCE.

To the Editor of The Analyst.

SIR,

IN answer to a query by a correspondent, (vol. ii., p. 426), I should be inclined to think that he is right, when he supposes the first-mentioned bird to be the Red Lark, (*Alda rubra*). With the most diligent search, I have never been able to find this bird on the borders of Staffordshire, &c., and the species is affirmed, by some authors, to be merely a variety of the Sky Lark, (*Alda arvensis*, Lin. ; *A. vulgaris*, of Willughby.) This point must be left to future investigation : and I must here express my regret, that your correspondent did not take some means to secure the birds, their nest, and eggs. He might thus, perhaps, have settled a very interesting question in ornithology.

The second bird is, undoubtedly, the Yellow Wagtail, (*Motacilla flava*, Willughby.) Your correspondent thinks that the bird he describes is in the "Lark family:" but there is no such family in ornithology. The Lark genus, (*Alda*,) is in the Finch family, (*Fringillidæ*,) and the Wagtail genus, (*Motacilla*,) is in the Warbler family, (*Sylviidæ*.) He, also, says, that it is much smaller than the Yellow Wagtail ; but, by Yellow Wagtail, I suppose he means the Gray Wagtail, (*Motacilla cinerea*, Aldrovand,) which, when in its best plumage, is chiefly yellow. If I am correct in this supposition, his describing the tail of the newly-observed bird to be much "shorter than that of the Yellow (Gray) Wagtail" is accounted for ; the real Yellow Wagtail (*Motacilla flava*,* Willughby) having a very short tail, compared with the Pied Wagtail (*Motacilla maculosa*, W. ; *M. alba*, of Willughby) or the Gray Wagtail. Another circumstance confirms me in the supposition that this bird is the Yellow Wagtail ; it is described as frequenting fields and shunning the water. On this account, the Yellow Wagtail is frequently called the *Field* Wagtail and the *Oatear* Wagtail, and the French call it "*Bergeronnette printanière*." *Bergeronnette* is, literally, *cattle attender*. The true Wagtails are called *Hochequeue*. On account of its habits, the length of its hind claw, and the shortness of its tail, this bird has been separated from the other Wagtails, (*Motacilla*,) under the name *Budytes*. It thus forms a link between the Wagtails and the Pipits, (*Anthus*.) Should your correspondent wish to obtain information on any British Bird, I should advise him to procure Mudie's *Feathered Tribes*, in which he will find full and copious notices of our feathered guests detailed in a remarkably fascinating style ; and it is indeed, as Loudon remarks, indispensable to every studier and every lover of the Birds of Britain.

S. D. W.

* The names *Motacilla alba*, *M. flava*, and many others, were not, as is generally represented, given by Linnæus ; but by the illustrious Willughby, who died 1672.

To the Editor of The Analyst.

SIR,

IN your last number, page 26, are some observations on the improvement of ornithological nomenclature, by S. D. W., and upon which I would beg to remark for a few moments.

If I understand your correspondent aright, his remarks have as much reference to the popular as to the scientific names, and it is to the former that I will confine my observations. I am one of the *unlearned*, and am, therefore, desirous that Natural History should be "made easy to the meanest capacity." I see no good reason whatever why natural science is to be circumscribed by learned walls, over which the vulgar cannot peep, stretch themselves upon tip-toe as much as they please: I can see no good reason why the name *Brimstone Butterfly* will not answer every general purpose fully as well as *Gonepteryx rhamni*. It is to be presumed that those who are latinists also understand English; and, therefore, when I describe an object by a name which every Englishman can understand, and which will convey to his mind a clear idea of the object to which I allude, I run no risk of misleading the scholar; for I presume his knowledge of Latin has not deprived him of his knowledge of English.

Frequent changes in the nomenclature of natural productions is highly to be deprecated. Scientific names are hard to be acquired by the unlearned; and if this be an obstacle in his way in running the race of science, how vastly are his difficulties enhanced by the endless changes which are now so fashionable. It would almost appear that the object of science, in the present day, was to attend wholly to names, they are so everlastingly changing; and thus the student—particularly the *unlearned* student—is for ever groping his dark and dubious way, always doubtful of the security of his footing, and frequently compelled to *unlearn* to day what he learnt yesterday.

I would offer my remarks (very unworthy, perhaps, they may be) in the spirit of kindness and good-will—in the spirit of a naturalist. I would, then, ask S. D. W., why give so many names to the Owl family?—(*Strigidæ*). In his list he gives us eleven Owls, with the word Owl attached to but one of them. Why not let the term Owl be the English *family* name, and attach some distinctive name to each separate species? This involves another difficulty—one of his Owls he calls a *Snowflake*: now, inasmuch as there is already a *Snowfleck* generally (perhaps universally) known by that name—though S. D. W. has changed the name to *Snowy Longspur*—is there not a great chance of the novice being misled by the same name, or names, so nearly similar, being attached to birds so very dissimilar? It will probably be answered, that, as the term *Snowfleck* is now discarded, the objection will not hold good: true, it will not hold good, abstractedly considered; but as it has been in such general use, and for such a long period, it strikes me very forcibly that the great similarity in the name *now used* for one bird, to

that *which has been used* for another, ought to be avoided ; because it may, possibly, lead to confusion. Besides this, I really think that some *reason* ought to be assigned for such *radical* changes of nomenclature as S. D. W. proposes. I want to know the grounds upon which my assent is required to such changes. Nothing can be more desirable than to have a general and universally-acknowledged nomenclature ; but I want some substantial reason assigned for the adoption of such names as *Whitebreasted Nightling*, *Sparrow Nightling*, &c., and for such uncouth designations as *Heath Madge*, and *Longeared Madge*, before I consent to use them.

Leaving the Owl, we will proceed to other birds, without any regard to classification. I find, in the list, *White Kite*, *Fern Nightjar*, *Minnow Kingfisher*, *Rivulet Dipper*, and a variety of other names of the same kind, and which, I think, have a direct tendency to mislead and to confuse the student. If I see the names *Kite*, *Nightjar*, *Kingfisher*, and *Dipper*, I clearly understand what is meant ; but when I see the name of *White Kite*, I am led to suppose that there must be *another Kite*, of some other colour. The same, also, of the others—*Minnow Kingfisher* would lead me to expect that there were *other British Kingfishers*, who preyed on other fish, and were distinguished by the name of the fish on which they fed ; and I should be further led to imagine that the *Minnow Kingfisher* fed upon minnows, and *upon no other fish*. The like, again, of the *Dipper*—by the distinctive epithet *Rivulet*, attached to it by S. D. W., I am naturally led to suppose that *there are other British Dippers* ; and I should expect to find them named, in contradistinction to S. D. W.'s, *River Dipper*, *Lake Dipper*, or *Sea Dipper*, as the case might be.

These remarks, I hope, S. D. W. will take in good part, as they are meant ; anxiety for the establishment of an undisputed and *fixed* nomenclature has suggested them : for nothing would give me greater pleasure than to see such a nomenclature adopted, not only in ornithology, but also in every department of natural science.

Perhaps, you will allow me to say one word, in conclusion, in further elucidation of the subject, respecting the nomenclature of British Butterflies. The genus *Melitæa* and *Argynnis*, are both called *Fritillaries*. *Why ?* If the one genus be *chequered*, the other certainly is not—it is *spotted* : and besides, I would have names appropriated to them that would better designate their habits ; and their habits are exceedingly dissimilar. Again, with respect to the *Blue Butterflies*—I can understand the *common blue*, the *pale blue*, the *azure blue*, the *silver-studded blue*, &c. ; here I can distinctly understand the distinctive differences meant to be noted : but when I find other blues denominated *Arguses*, I am at fault, for the one class is quite as much eyed as the other.

These are the ideas which spontaneously sprung up in my mind, in reading S. D. W.'s paper. I submit them to his consideration, applauding his object, and wishing him abundant success.

December, 1835.

CARLO CYFFIN.

To the Editor of The Analyst.

"I will description the matter to you,
If you be capacity of it."

SIR,

As you have admitted the animadversions of a Birmingham correspondent of *The Analyst* on an insignificant little work which I lately published, I feel assured you will not refuse to insert the following reply. My *Guide to an arrangement of British Birds*, written in great haste, among other numerous avocations, was printed, *primarily*, for my own convenience, and, secondarily, for the benefit of other collectors of British birds; and I expressly stated, in the preface, that I hoped all due allowance would be made for any typographical or other errors. With regard to the arrangement, I adopted that which I consider still to be the best; and I distinctly pointed out that if a collector were displeased with the relative position of any or every individual bird in the catalogue, he had nothing to do but to change, "*ad libitum*," the place of each and every case to which the names were attached. But, to the *gravamen* of the charge:—the strictures of your correspondent arrange themselves under two heads—the first embracing the faults of the author, the second impugning the accuracy of the printer. The one a class of faults that may be said to exist, *ἀπλως*, in the work itself, the other to arise, *κατὰ συμβεβήκος*. On both of these "I will try conclusions" with him. He asks me on whose authority I admit the *Picus medius* as a distinct species?—simply then on that of Linnæus, Temminck, Bewick, etc. Secondly, why do I admit the *Emberiza chlorocephala* as such?—I do so because Gmelin, Linnæus, Lewin, Brown, Montagu, and Fleming, have described it as a species; and I include it among the *British* birds, Bewick *alone* having mentioned five instances of its occurring in England. As, however, this erudite ornithologist seems inclined to consider this bird as merely a variety of *Emberiza citrinella* (*differing only*, "*si rite recorder*," *about the head and neck*, it may just be as well to set him right by a comparison of the descriptions of the two species, as given by Bewick. Having done so, others may form their own opinions respecting the matter.

Emberiza citrinella.

Length somewhat above six inches. Bill dusky; eyes hazel; the prevailing colour is yellow, mixed with brown of various shades; the crown of the head, in general, is bright yellow, more or less variegated with brown; the cheeks, throat, and lower part of the belly, pure yellow; the breast reddish, and the sides dashed with streaks of the same; the hinder part of the neck and back are greenish

Emberiza chlorocephala.

It is about the size of the Yellow Bunting. The bill dark reddish; the head and neck, as far as the breast, pale olive green, slightly powdered with pale ash grey. The chin and throat are pale greenish yellow; a streak of the same colour falls down from the corners of the lower mandibles, before the auriculars. The breast and belly are of a light rusty chestnut; the vent and under coverts

olive; the greater quills dusky, edged with pale yellow; lesser quills and scapulars dark brown, edged with grey; the tail is dusky, and a little forked, the feathers edged with light brown, the outermost with white; the legs yellowish brown. It is somewhat difficult to describe a species of bird of which no two are to be found perfectly similar, but its specific characters are plain, and cannot easily be mistaken. The colours of the female are less bright than those of the male, with very little yellow about the head.

of the tail, the same, but of a paler and more dingy cast; the feathers on the back, scapulars, and greater and lesser coverts, are very dark brown in the middle, but the rest of the webs are much lighter, and of a rusty brown; the lower part of the back and upper coverts of the tail are also of the latter colour; the quills and tail feathers are deepish brown, the former edged with light brown; middle tail feathers the same; the rest plain, and the outer feathers are somewhat longer than the middle ones. The legs reddish yellow.

Thirdly, on whose authority do I admit *Falco lithofalco* as different from *Falco æsalon*?—I reply, on that of Linnæus, Buffon, Bewick, etc., etc.—These, then, are the *three* offences of *commission* with which I am charged; and for *three* others of *omission* he chooses to consider the work rendered null and void, as to its utility, otherwise, as he himself allows, a very great help to the ornithologist. “The very sum and substance of my wrong hath this offence, no more.” Now, with regard to the three former objections, I think it a sufficient answer to observe that, even allowing them—which I do not—not to be species, still, as they certainly are so considered by many, it is evidently better to supply the names for their accommodation; and those who entertain a different opinion have nothing to do but to set aside the names of those three species. It may be asked why, on this ground, I have not admitted the names of the other three species? (one of these, by the bye, the *fork-tailed kite*, is given, by Bewick, as a synonym of the Glead, but I will not affect to misunderstand what is meant)—I beg, in answer, to refer your correspondent to the date of my preface, *before* which my *Guide* was composed, and also, at the same time, to ask him *when*, by what authors, these birds have been *described*, how often, and at what *places*, they have occurred in Britain. At the same time, he is informed that though I fully expect that one (the *Regulus*) or more of them will not remain considered as good species, yet, for the reason adduced above, I have added them in a supplement, containing, also, the emended errata to the *Guide*, which will accompany it gratis, and any person may obtain it by applying to Mr. Longman, through his bookseller.—Having thus dismissed the charges which concern myself, I now come to those so “rife and rank” of the printer; some of which I take upon myself to be answerable for, as I am chargeable with them, if faults they be. *Whole* snipe your correspondent imagines to be a misprint (for *large* snipe, as I suppose); but, whatever its *market* name may be, it is by this name that the bird is known to sportsmen from Lincolnshire to Hampshire; and, therefore, I see no reason, at present, to alter it. The nice ear of this learned critic is offended, in the next place,

by a termination in *us* occurring in the same genus with one in *a*. Having chanced to learn that the original termination in the Greek was in *os*, he thinks that that orthography ought to be preserved. By the same rule, this modern Procrustes might wage war against *Otus* uncompounded, as he indulges in such a tirade against it when in composition (*Brachyotus*). *Cirlus* might fall under his lash, because, forsooth, in the same genus, we meet with *citrinella*. *Chauliodus* might share the same fate, as also *Pomarinus*, *Iliacus*, *Phanicurus* (in both syllables, and there occurring in the same genus, *Rubecula*), *Melanopterus*, *Hyperboreus*, *Phasianus*, *Lagopus*, *Cholchicus*, *Ochropus*, *Numenius*, *Urogallus*, *Numenius*, *schæniclus*, and a host of others, "*quæ nunc perscribere longum*;" but I cry you mercy, Sir, "*jam satis est*." Only one word more—this *anonymous* writer says that he selects only some out of many errors. May I then ask of his candour why he came to instance those which, immediately after, he allows himself, have been corrected, and that to all intents and purposes; a name on one page being just as useful for cutting out as its fac simile on another: indeed, he tries, evidently, to magnify these *apparent* errors, by printing, at full length, the correct names by the side of the misprinted ones, as if to increase their number. Thus ends this long, dark catalogue of crime, in answering which I have taken up too much space indeed, and will only say, in extenuation, that, henceforth and for ever, I take leave of Mr. ———, and his animadversions. "*Verbum non amplius addam*."

I remain, Sir,

Your very obedient servant,

FRANCIS ORPEN MORRIS.

REPORT OF PROVINCIAL SOCIETIES.

SHROPSHIRE AND NORTH WALES NATURAL HISTORY SOCIETY.

THE first General Meeting of the members of this Society, (whose formation we noticed in our last number), was held in the temporary Town-hall, Shrewsbury, on Thursday, November 12th, and was attended by a brilliant assemblage of the beauty, rank, and respectability of the county, who evinced the deepest interest in the proceedings.

The President (the venerable Samuel Butler, D. D., F. R. S., Archdeacon of Derby) opened the business of the day, by delivering the following eloquent and powerful Address:—

“The most important agent in the natural world is light ; which, with its frequent concomitant, heat, sets in motion all the animal and vegetable world, arrays the whole creation in its variety of gorgeous hues, vivifies the dormant seeds of plants, and causes even inert matter to assume new combinations and new affinities, and to ferment, as it were, with the germ of vitality. What light is to the material, knowledge is to the intellectual world. Nay, we even use the word metaphorically, when speaking of the operations of the mind. But, as in the case of inert matter, some fermentation takes place before it assumes a more beautiful arrangement in a chrystallized or prismatic form, so, in that of mental improvement, the first rays of light which are let in upon the uncultivated mind are apt to cause a peculiar commotion upon it. They act upon it as the Spirit that moved on the face of the chaotic deep ; and do not bring the confused and indigested mass into order without a strange and often a violent perturbation. Hence we shall find that, whenever a sudden and vehement impulse is given to the operations of the mind, men become restless and self-willed. In their desire to advance in the pursuit of objects heretofore unknown to them, they are hurried forward by a tumult of impatience and delight ; and in their eagerness to outstrip their teachers, they rush impetuously to the goal, they overlook or overleap many previous necessary conclusions, and, mistaking the first rays of light which beam on their understandings, for the brightness of meridian day, they become filled with self-sufficiency and self-will—the two greatest obstacles to philosophical investigation and intellectual improvement. These observations appear to me not inapplicable to the present moment. There is a great and general movement in advance throughout the civilized world ; and such an impulse cannot be given to men’s minds without important results, nor without considerable agitation. Mankind may be considered, at present, as under a sort of moral and intellectual ferment, from the influence of the first beams of knowledge shining on their minds, and rousing a confused and inert mass into action ; and before any organized or well-regulated arrangement can take place, we must expect the smooth and the rough, the cold and hot, the moist and dry, the dense and rare, to come into collision, and contend with each other for the mastery. This agitation cannot, at once, subside ; and while it lasts we can look for little actual advancement in science : but when it becomes composed and arranged, just as in the defecation of any other fermentive process, we may expect the happiest effects.

“Prejudice and presumption are so closely allied to ignorance, that where the former exist we may always expect to find the latter ; and they are the greatest foes to sound philosophy and scientific improvement. We may observe this on all occasions, and not least in the attacks which have been made, by mistaken zeal, upon the new science of geology. For my own part, I do not see how the scriptural account of the creation is more impugned, or invalidated, by the inquiries or discoveries of geologists in the present age, than it

was, only two centuries ago, by those of Galileo, who, in that enlightened period, suffered the penalty of a long imprisonment, and nearly incurred the severer torments of death at the stake, for asserting those truths which no man now thinks of denying, and which have been confirmed and established by the still more important discoveries of our own immortal Newton. That most able and highly-gifted individual who now adorns the University of Cambridge, and that college in it which has to boast the names of the two greatest philosophers of any age or country—for what can be greater than those of Bacon and Newton?—and whose own name, hereafter, will be added to a list of worthies unexampled in the annals of science, and claiming the admiration of the latest posterity: he, I say, who has made the geology of this county, in particular, the object of his special attention—and after this description of him it is needless to add the name of Professor Sedgwick—in that matchless and profound discourse which he has published on the studies of the University—a work which, in a small compass, contains volumes, and which can never be too much read, or too seriously reflected on—has abundantly and unanswerably replied to all such objections. It will never be found that real science is at variance with scriptural truth. It may help us to a better and a clearer interpretation of those truths which are recorded in scripture, but never will it impugn the sacred oracles, or promote the cause of irreligion or infidelity. If it enlarges our views of this wonderful creation, if it enables us more clearly to understand the mechanism of the world we live in, and the admirable contrivances for the preservation of the creatures which inhabit it, and the unerring laws by which the worlds around us are moved, and governed, and retained in their several orbits, or in their dependent systems, it can only lead us to contemplate, with more reverential awe, the inconceivable power and majesty of that Infinite and Almighty Being who called them into existence by his single fiat, ‘who spake the word and they were made, who commanded and it stood fast.’

“With these views, then, let us approach the great book of creation, and apply ourselves to study its pages, with feelings of gratitude and veneration towards Him who formed it. Of love for the goodness, of reverence for the power, of awe for the majesty, of admiration for the wisdom displayed in all His works, of thankfulness for our own creation, for our preservation, and for all the blessings of this life; and let us remember that this world is but a passage to another, and that natural religion is but the portal by which we may approach revealed. While, therefore, we thus contemplate the wonders of the world we now inhabit, and reflect on the dominion which is given us over the inferior creatures in it, let our hearts overflow with pious gratitude, and dutiful reliance on those glorious promises of a still brighter and better world, which are held out to us in the gospel of our Lord, Jesus Christ. This is the great end to which all our studies should be directed, and to

which that of natural history can hardly fail to lead every pious and well-regulated mind. So that we may

‘ Find tongues in trees, books in the running brooks,
Sermons in stones, and good in every thing.’ ”

The venerable president then alluded to the value and importance of such institutions, when considered in a national point of view, as promoting and diffusing a taste for science, and forming a nucleus, in different parts of the kingdom, round which may be collected a variety of interesting materials, for scientific purposes and general information. Such a concentration would give a better and more thorough insight to the inquisitive and scientific traveller of the productions of the district he is passing through, than the most splendid private, or even metropolitan, collections. The illustrations, therefore, of the natural history of any district, are those which claim our first attention, whether we regard its geological structure, its mineralogy, its hydrography, its entomology, its botany, its zoology, its meteorology, or any other of its phenomena. A knowledge, also, of the habits and manners of its inhabitants, and of the changes they have undergone, rendered a collection of antiquities a very delightful and valuable addition to a cabinet of natural history. Arms, implements used in husbandry or the arts, domestic utensils, dresses—in short, whatever tends to illustrate the manners of by-gone times, and especially coins, or sepulchral reliques, and inscriptions found within the district, which frequently mark some important site, or historical epoch connected with it, are all of great value in such collections. In all these departments, the president solicited the contributions of the friends of the society, and especially recommended that they be always accompanied with a statement of the places where they were found, and such other particulars as were known.

The president then adverted to the heavy expenses in fitting up the rooms of the museum with proper cases, &c., which must necessarily be incurred by the society at its commencement ; and noticed, with great commendation, the laudable example which had been set, by two gentlemen of the county, in contributing handsome donations of money, towards effecting that object.

The Archdeacon next proceeded to observe that a very important feature in these societies was, that they are sufficiently attractive to occupy the notice and attention of the softer sex. Abstract science is generally too crabbed and severe to engage the finer and more delicate perceptions of female minds in its pursuit ; and though there have not been wanting some splendid exceptions to this general observation, and at the present moment an English lady holds the highest rank in mathematical and astronomical studies, and bears her faculties with a degree of meekness which sheds a brighter lustre on her scientific acquirements than the most exalted talents,

unadorned with so much modesty, could attain, yet it is but rarely indeed that a name like that of Somerville can be found in the highest departments of severe philosophy.

But far different is the case with those objects which our nascent institution is founded to promote. Natural history presents many charms to the cultivated female mind. Considered as an innocent and elegant pursuit, as combining information with amusement, and occupying, without engrossing, the mind, engaging it in agreeable study, without withdrawing it from domestic duties, it has a thousand charms on female attention, particularly in those branches which relate to botany, entomology, and ornithology. He, therefore, trusted that the ladies of Shropshire would follow the bright example set them by the ladies of the neighbouring county of Worcester, in fostering the society established there, by taking under their patronage, and assisting, and sharing in the pursuits of, the institution whose cause he now advocated.

The learned president thus concluded, amid the unanimous plaudits of the assembly:—"I am sensible how great a trespasser I have been upon your time and patience, and, though I had much more to say, I must hasten to abridge what remains. But one thing is too important to be passed over unnoticed. I mean the great improvement which such institutions are likely to effect in the diffusion of science and civilization—in giving a taste for rational and useful amusements, instead of frivolous and unprofitable pursuits—in sharpening the faculties of the intelligent, by collision—and in softening prejudices and removing asperities, by bringing into nearer contact various orders of men, and uniting them in that one republic in which all are ambitious to be enrolled—I mean that of letters. These studies may both relax the minds of those who are wearied with graver cares, and amuse the hours of those who have no heavier concerns; they may afford food to the scientific, instruction to the inquiring, and occupation to the vacant mind. They can injure none, they may delight many, they may improve all: and I, therefore, earnestly recommend them to your attention, with thanks for the patience with which you have heard me, and hearty good wishes for the prosperity of this institution."

The Report of the council was then read by Dr. Goldie, of which we are enabled to present the following abstract:—

The council, after congratulating the meeting on the flourishing prospects of the society, even at this early period of its existence, and referring to the objects contemplated by its founders, explains, that, in assuming its name from the extensive district comprehended by Shropshire and North Wales, the society disclaims all intention of monopolizing patronage, or interfering with the claims and objects of the sister societies established at Ludlow and Caernarvon; but, on the contrary, rejoices in the extension of knowledge and the increase of institutions calculated to promote it in the surrounding districts. The Report next alludes to the success which attended the first appeal of the society to the public, in obtaining a prompt

and numerous accession of members, and states their present number to amount to 174, including persons the most eminent in rank and distinguished in science and literature in these counties. The council next proceed to a summary enumeration of the donations which have been presented to the museum, and a review of the present state and prospect of its several departments. The chief value of the geological collection is stated to consist, at present, in the specimens of fossil plants from the coal-measures of different districts of England, particularly of Shropshire, presented by Dr. Du Gard, and several other donors. The mineralogical department is next noticed, and a wish expressed for more ample contributions of the rare and beautiful minerals afforded by the mining districts of this neighbourhood. The botanical collection is stated to have already made great progress, through the large and valuable donations of W. A. Leighton, Esq., Dr. Wilson, and others; and through the further contributions promised to it, especially by C. C. Babington, Esq., of Cambridge, and J. E. Bowman, Esq., of Gresford (both distinguished botanists), its speedy attainment to a high degree of completeness is confidently predicted by the council. In the department of zoology, some beautiful skeletons of quadrupeds and reptiles (the gift of T. C. Eyton, Esq., and Mr. T. B. Barrett), are the subject of high commendation, both on account of the talent and industry displayed in their preparation, and the great utility of such specimens to zoological science. Other specimens of vertebrated animals are alluded to; and, after pointing out the desirableness of acquiring a complete collection of British birds, and alluding to the zeal and ability of the curator of ornithology (T. C. Eyton, Esq.), the council add their confident hope that his efforts will be seconded by all who have the opportunity; and, in particular, that gentlemen will kindly appropriate to the museum any rare birds which they may meet with in their shooting excursions, and will give similar directions to their gamekeepers; by which means the society's cabinets would be speedily stored with the birds of the neighbouring districts, at no cost, and little trouble to the donors. The donations to the cabinet of entomology are next referred to; and the council point out the certainty derived from the well-known ability and devotion of the curators (the Rev. F. W. Hope, and W. W. Watkins, Esq.) to this pursuit, that all donations to this department will be made most available for the illustration of this fascinating and popular branch of natural history. The beginning of a cabinet of conchology is next noticed, with a request for further donations in that department.

In that of antiquities, the munificent and most valuable donation, by Archdeacon Butler, of an Egyptian mummy, in its two cases, in fine preservation, and enriched with hieroglyphics, is noticed as demanding the society's warmest gratitude,—not only from its great intrinsic value, and the deeply-interesting historical associations connected with it, but also as a lasting and splendid memorial of the attachment of the donor to the interests of the society.

The council refer, also, to the library, and, after acknowledging the donations of books which have been received, especially a very interesting and beautiful MS. on Druidical Antiquities, by T. F. Dukes, Esq., F. S. A. (one of the antiquarian curators), point out the formation of a scientific library of reference, as a most essential object of the society, and one without which the most richly-stored museum would be comparatively unavailable for the purposes of science. But it is observed that, for the present, even this essential consideration must be postponed to the urgent necessity of devoting the society's funds to fitting up the museum with the cabinets which are indispensably required for the safe custody and due arrangement of the donations entrusted to the museum. Towards this important object, which, at the present moment, presses heavily on the society's resources, the liberal donation of five pounds each by R. A. Slaney, Esq. and Colonel Wingfield, and of one guinea by Mrs. Sutton, were gratefully announced.

The general state of the society's finances is next adverted to, and the members individually are earnestly recommended to exert their influence in obtaining an accession of new subscribers, as a present aid and permanent benefit to the society.

The council, lastly, advert to their having it in contemplation to commence periodical meetings of the members of the society, for the purpose of scientific intercourse, and the reading of communications; and also, as soon as possible, to organize a series of popular lectures on subjects of natural science: and they conclude by expressing their confident hope that the endeavours of the society to promote the cause of science, will continue to be cordially seconded by the public; and that, when called upon to present the next annual report of their proceedings, they will be enabled to congratulate their fellow members and the public on the steady and progressive advancement of the institution, in its career of public favour and acknowledged usefulness.

On the conclusion of the reading of the Report the following resolutions were unanimously adopted:—

That the title of the Society, for the future, shall be **THE SHROPSHIRE AND NORTH WALES NATURAL HISTORY AND ANTIQUARIAN SOCIETY.**

That the following Gentlemen be elected Honorary Members:—Roderick Impey Murchison, Esq., F. R. and G. S.; Rev. Adam Sedgwick, M. A., F. R. and G. S., Woodwardian Professor of Geology in the University of Cambridge; Rev. William Buckland, D. D., F. R. and G. S., Professor of Geology in the University of Oxford; Rev. John Stevens Henslow, M. A., F. L. S. and G. S., Regius Professor of Botany, in the University of Cambridge; John Phillips, Esq., F. R. and G. S., Professor of Geology, King's College, London; Charles Cardale Babington, Esq. M. A., F. L. S., of St. John's College, Cambridge; Joshua Trimmer, Esq., F. G. S., Secretary of the Caernarvonshire Natural History Society; Rev. William Whewell, M. A. of Trinity College, Cambridge.

That the following gentlemen be requested to continue their duties as officers of the Society until the next General Meeting:—*President*—The Venerable Archdeacon Butler, D. D., F. R. S., &c. &c.: *Vice Presidents*—Thomas Du Gard, Esq., M. D., F. G. S.; Rev. Francis Knyvett Leighton, M. A.; Robert Aglionby Slaney, Esq.; John Wingfield, Esq.: *Treasurer*—Thomas Eyton, Esq.: *Secretaries*—Henry Johnson, Esq., M. D.; William Allport Leighton, Esq., B. A.: *Council*—Mr. John Carline; W. James Clement, Esq.; Rev. Charles Drury, M. A.; Thomas Farmer Dukes, Esq., F. S. A.; Thomas Campbell Eyton, Esq.; Richard Ford, Esq.; George Goldie, Esq., M. D.; James Loxdale, Esq.; Mr. Henry Pidgeon; Thomas Sutton, Esq.; Rev. J. M. Wakefield, M. A.; and Mr. James Whitney.

After the usual votes of thanks to the officers and donors, the meeting separated.

So brilliant an effect was produced by the venerable President's luminous and animated address, and so powerful a spirit of good fellowship and co-operation pervaded the breast of every individual present at the meeting, that the number of subscribers has since been augmented to 184, and donations of specimens exceeding prior ones in interest and value, and a contribution of money towards the fitting up of the museum, have been most liberally forwarded by friends of the institution in various portions of the district.

We are also happy in being enabled to announce that the Council have determined to hold evening meetings of the members of the Society, for the purpose of reading scientific communications on the various branches of Natural History, on the first Tuesday in each month, and that the first meeting is fixed for Tuesday, the 5th of January next.

BIRMINGHAM SCHOOL OF MEDICINE AND SURGERY.

SINCE the last quarterly meeting of this institution, the following donations and subscriptions have been recorded:—

Sir F. Goodriche, Bart. M. P., £10.; T. Woods, Esq., Coleshill, £10.; J. E. Piercy, Esq., Birmingham, £10. 10s.; Rev. Mr. Peglar, £2. 2s.; Mr. Goddard, £2. 2s. *Annual*,—Mr. J. Shore, £1. 1s.; Mr. Guest, £1. 1s.; Mr. Smith, £1. 1s.; Mr. Powell, £1. 1s.; Mr. R. Harris, £1. 1s.; Mr. J. E. Piercy, £1. 1s.; Mr. Ruberry, £1. 1s.; Mr. James James, £1. 1s.; Mr. W. Bourne, £1. 1s.; Mr. C. Brewin, £2. 2s.

The museum of comparative anatomy has been enriched by specimens of the *Felis onca*, *Armadillo Novemcinctus*, and *Viverra nasua*, from the collection of Mr. Wombwell. The Earl of Mountnorris

has presented a remarkably fine skin of the *Boa constrictor*, shot whilst swimming across a creek, with a deer in its mouth, by Captain Macleod. Mr. Hunter has contributed the rare skull of the red *Oorang Outang* of Borneo, sister of the living specimen now exhibiting in the Zoological Gardens, London. That flourishing Society has transmitted to the honorary secretary of the School, the following liberal resolution, viz.,—"that the Society, with pleasure, are willing to present to the museum of the Birmingham School of Medicine, the bodies of animals dying in the Society's menagerie and not required for their own purpose."

The attention of the profession is called to some beautiful wax models, executed by Mr. Hardy, of Gloucester, especially to the case of *osteo-sarcoma*, presented by Mr. J. Fowke, of Wolverhampton.

The following gentlemen form the officers for the ensuing year :

Committee of Management,—The Rev. Chancellor Law ; Rev. Egerton Bagot ; James Taylor, Esq. ; Edward Johnstone, M. D. ; John Johnstone, M. D., F. R. S. ; Mr. Armfield ; Mr. E. T. Cox ; Mr. B. Guest ; Mr. J. E. Piercy ; Mr. H. Smith ; Mr. J. G. Reeves ; Mr. J. W. Unett.

Auditors of Accounts,—Mr. Armfield ; Mr. J. G. Reeves.

Visitors,—Mr. G. Attwood ; Mr. E. T. Cox ; Mr. J. E. Piercy ; Mr. Charles Shaw.

BIRMINGHAM PHILOSOPHICAL INSTITUTION.

THE lectures announced in the last annual report to be delivered at this institution during the autumn of 1835, were, a course "On Mental Phenomena connected with the exercise of the Imagination," by Mr. L. Parker, and one "On the early English Opera," by Mr. Edward Taylor. Of the former, the three first lectures only were given, the delivery of the remaining two lectures being unavoidably postponed for some time. Mr. Parker's first lecture will be seen in another part of the present number. In place of the fourth and fifth lectures of Mr. Parker, lectures were delivered on the 9th and 16th of November, by Mr. Russell, "On the discovery of a Toad found alive imbedded in a solid mass of new red Sand-stone," the depositions relating to which circumstance were given in the last number of *The Analyst* ; and by Dr. Corrie, "On the flowing of Sand under pressure." Of this latter lecture, which was prepared and delivered to the members at a very short notice, the following is a brief and imperfect outline :—

The lecturer first adverted to some of the ordinary phenomena which are observed in fluids, both when in motion and at rest ;

shewing that when a fluid, as mercury, is poured into one leg of an inverted syphon, it will ascend to the same level in both legs, provided the pressure in both be the same; and that if water be allowed to escape from a vessel filled with it, through an aperture in or near the bottom, the rapidity with which the water flows out will not be uniform, but will diminish in proportion as the height of the column of water in the vessel diminishes: in other words, the quantity that flows out will be unequal in equal times. Such, however, is not the case with sand, as was first shewn, a few years since, by M. Bernard, of Geneva, in describing, to the Philosophical Society of that city, an anemometer, or measurer of the wind, which he had so constructed that the force and direction of the wind were measured by the quantity of sand which escaped from an aperture variable in its size. For this instrument to give accurate results, it was essential that, whatever might be the pressure, equal quantities of sand should flow through the same aperture in equal times; and, to prove that such is the case, Mons. Bernard instituted a set of experiments on the subject, which led to the knowledge of some very curious and interesting facts. Many of M. Bernard's experiments were repeated during the lecture, by Dr. Corrie. The sand to be used should be well sifted, dry, and not too fine; that which will pass through a sieve containing thirty-eight wires per inch in one direction, and forty-five or forty-six in the other, flows very readily: but the aperture through which the sand is to flow must not be less than $\frac{1}{79}$ of an inch in diameter. Part of the apparatus used for exhibiting the experiments was a tin box, open at the top, and provided with an aperture that could be widened or lengthened at pleasure, and the sand that passed out was estimated by measure. It was seen that the quantity of sand that flowed in a given time through a given aperture, was the same, whatever was the weight, the volume, or the height of the sand in the box above. The height of the sand was sometimes increased very considerably, and heavy weights were added to increase the pressure, but without producing any change.* Sand being poured into one leg of an inverted syphon did not ascend in the other, but extended only a very little way into the horizontal part. Whatever pressure may be given to the upper surface of the sand, it exerts no influence on the issue below. An inverted syphon had some mercury poured in until both the limbs were partly filled; and the sand was then poured in on the one side upon the mercury, but no elevation of the mercury in the other leg took place. If pressure be added to the weight of the sand, still the mercury will remain unmoved. A wafer was pressed against the

* It was remarked by M. Bernard that there is, perhaps, no other natural force on the earth which produces, by itself, a perfectly uniform movement, and which is not altered, either by gravitation, or friction, or the resistance of the air: for the height of the column of sand has no influence; friction, in place of being an obstacle, is the regulating cause; and the resistance of the air within the column must be so feeble as to be altogether insensible as a disturbing force.

end of a tube about half an inch in diameter, and the tube was then filled with sand and held in an upright position, without the escape of the sand, although the wafer adhered very slightly. It was shewn, also, to be impossible to push sand out of a tube, even when inclined as much as twenty degrees downwards, the pressure being transmitted to, and resisted by, the sides of the tube, which would ultimately give way. This fact explained how, in the blasting of rocks, sand is as effectual in filling up the hole, as a plug, or the most compact driving, whilst, at the same time, it is free from the dangers unavoidably attendant on these latter contrivances.*

The following is a brief analysis of Mr. Taylor's interesting lectures "On the early English Opera":—

LECTURE I.—Mr. Taylor commenced by saying that the history of the national opera presented a more interesting and more extensive field of inquiry than the subject on which he had before addressed the members of the Institution, (English Vocal Harmony), since its range was more extensive and its influence more powerful. It had been said that the English had no national opera; but that all their notions of it had been derived from Italy: He proposed to inquire into the correctness of this assertion. The records of the English Opera were exceedingly scanty and imperfect; and, in fact, its history, connectedly and fully, had never been written. To this circumstance, many erroneous opinions were to be traced.

The earliest dramatic exhibitions in England, as in every other part of Europe, were in the 12th century, when it was customary, on festival days, to dramatize and represent portions of scripture. In the reign of Henry VIII., tournaments were succeeded by the more peaceful exhibition of the pageant; and in the masques of B. Jonson the personages and characters of these several exhibitions were united and grouped into a classical form, with the addition of dialogue, scenery, and music. Here, then, was the germ of the opera.

Mr. Taylor then reviewed the history of the stage, before and at the time of Shakspeare, and the history of music as connected with the stage. Some very curious illustrations were introduced: masque music, in the reigns of Henry VIII., Elizabeth, and James I., both dances, songs, and chorusses. Elizabeth fostered and encouraged the musical talent of her subjects: James banished these from his court and favour, and introduced a set of foreign musicians, whose works are now only known to collectors, and whose merits were in every way inferior to those of the English writers of the preceding reign. A very beautiful composition, by Wilbye, in honour of his royal mistress, concluded the lecture.

LECTURE II.—Charles I. manifested the same predilection for

*The law mentioned in this lecture,—that of equal quantities of sand flowing through the same aperture in equal times,—has been applied to an useful purpose in Birmingham, in regulating the equal supply of fuel to the fire-place of steam engines, without the superintendence of a workman.

foreign composers as his father, before whose death the fine school of madrigal-writers was extinct: he also inherited James's love for masques. The celebrated masque, given by the four Inns of Court, called "The Triumph of Peace," was noticed, and some of its music,—a part of which is preserved in the Music School library, at Oxford,—was given. In *Comus*, the masque attained its highest perfection. An interesting account of this beautiful dramatic poem was given, and one of its songs, as originally set by H. Lawes, was sung. Milton's opinion of the proper use and employment of the stage was given in an eloquent passage from his prose works; and the lecture concluded with a review of the writings and character of H. Lawes, to whom, Mr. Taylor said, the proud distinction of being the friend of Milton worthily belonged. Some passages from Lawes's writings, breathing a noble and high-minded spirit, as well as a cultivated understanding, confirmed this remark, and several of his songs justified Milton's discriminating appreciation of his talents as a composer.

LECTURE III.—In order to ascertain the amount of obligation which the English opera owed to that of Italy, Mr. Taylor gave a succinct review of the latter from its very commencement in 1597, illustrated with some very curious specimens. He then traced the origin and progress of recitative, quoting, in illustration of his remarks, from cotemporary Italian authors. It appeared from these, as well as from the illustrations, that the English and Italian operas proceeded from a different point, on different principles, and aimed at a different object: it also appeared that the opera only became a regular dramatic exhibition in Italy cotemporaneously with the production of *Comus*.

The lecturer then proceeded with the history of the English stage, from the time of Shakspeare to that of the Restoration: interspersed with many curious and interesting circumstances connected with this subject. The plays of Shakspeare were not then favourites with the public, and but few were on the manager's acting list. They were usually subjected to alterations, and frequently acted under new titles. D'Avenant, in consequence of this distaste for Shakspeare, had recourse to a new kind of entertainment, in which music was connected with the drama. The second of these was *Macbeth*, to which he added a scene, (borrowed from an old play), for the purpose of introducing music into the piece. It has been a subject of no little controversy, who was the author of this celebrated music; some writers having ascribed it to Purcell, and Mr. W. Linley, in the preface to his "*Songs of Shakspeare*," to Eccles. Mr. Taylor entered into a full discussion of this historic doubt, detailing and commenting on all the evidence for and against each claimant; his summing up was decidedly in favour of Matthew Lock. Some of Lock's other dramatic music was then sung, as well as the music in the play of *The Witch*, (probably the earliest dramatic music extant), and, afterwards, a selection from the music in *Macbeth*.

Mr. Taylor then proceeded to examine the correctness of the generally-received opinion, that the extinction of the fine school of English vocal harmony, which existed in the reign of Elizabeth, was effected by the Protector and his adherents; and showed, by an appeal to facts and dates, that this had, in fact, been accomplished by James I., and that Morley, Wilbye, Weelkes, and their contemporaries had all ceased to write, and their music to be sung, thirty years before Cromwell's name had been heard of.

LECTURE IV.—Mr. Taylor began this lecture by reviewing the state of music in England, at the time of Purcell's birth, (1658), and that, also of Italy, (as far as related to dramatic music), in order to ascertain whether Purcell had thence been enabled to derive any of the materials for his operas, or any hints for their construction. Specimens were given from Italian operas of the dates of 1650 and 1662, also from the operas of Lulli and other French composers of the same period. Purcell's first opera, "*Dido et Æneas*," then came under review, and it appeared, that, although this opera was formed on the Italian model, (the dialogue being carried on in recitative), that in variety, beauty, and originality, it was superior to any foreign production of a like kind,—especially in the construction of the recitatives, in which style of writing Purcell at once proved himself a consummate master. A selection from this rare and beautiful opera (which exists only in MS.) was then given. The music in "*Œdipus*" and in "*Tyrannick Love*" was next alluded to, and a duet, from the latter, sung.

Mr. Taylor then noticed the discouragement which Purcell and his contemporaries received from Charles II., by whom all English music was proscribed, and a number of inferior French composers introduced to his court, and patronized,—among these, M. Grabu, for whom Dryden wrote his "*Albion and Albanus*,"—from which a duet was sung. The next opera which came under notice, was Shadwell's version of "*Timon of Athens*," for which Purcell supplied the music. The lecture concluded with a duet and chorus from this Play.

LECTURE V.—Purcell's opera, "*Dioclesian*," was noticed, with marked approbation. This, Mr. Taylor observed, might be properly called the first legitimate English opera. Purcell had here thrown aside the rules which the Italians had prescribed for the construction of dramatic music, and had composed an opera, of which the dialogue was spoken, and music only occasionally introduced. His own views of dramatic composition were modestly, yet eloquently, expressed, in his dedication of this opera. Some pieces from it were then sung. Mr. Taylor next proceeded to review the state of instrumental music at this period—their compass, character, and usual mode of employment. The success of this opera stimulated the partizans of foreign talent to import a number of singers and dancers; but the attempt to rival Purcell wholly failed, and brought only loss on those who projected it.

His next opera was "King Arthur,"—written for him by Dryden, from which several pieces, including the celebrated *Frost Scene*, were performed. The success of these operas was not regarded with pleasure by the dramatic writers of the time; and even the managers joined in the endeavour to ridicule and proscribe them.—These efforts appear to have been unavailing; the fame and the popularity of Purcell were established, and soon after appeared his "Fairy Queen." From this opera four pieces were given.

LECTURE VI.—Purcell's next dramatic work was, "A Fool's Preferment," from which rare composition two songs of great beauty were given. This play, by D'Urfey, was succeeded by the first and second parts of "Don Quixote," in which Eccles was, for the first time, associated in dramatic fellowship with his great cotemporary: from these pieces illustrations were also given. Then came Fletcher's "Bonduca," revived by Purcell, from which the majestic chorus of the druids, "Hear us, O, Rugwith!" and the well-known duet and chorus, "To Arms!" were selected for performance; and from the "Indian Queen," the fine scene "Ye twice ten hundred deities," and a tenor song of uncommon sweetness and beauty. A selection from the music to "The Tempest" followed. A variety of historical and critical remarks were interspersed, chiefly extracted from contemporaneous publications, and tending to elucidate Purcell's character, and the difficulties with which he had to struggle, and curiously illustrative of the dramatic and musical history of the times. He seemed now to have established himself in the public favour, and a career of usefulness and success seemed opening before him, when those anticipations were blighted by his early death. His enthusiasm seems to have continued unabated to the last, and during his dying illness he still laboured in the service of his art.

Mr. Taylor closed this series of his lectures with a review of some of the most remarkable and beautiful features in Purcell's character.

It will be seen, from these lectures, that Mr. Taylor has entered on the review of a subject of which the history has hitherto been given but scantily and erroneously. That Burney's "*History of the English Opera*," is both meagre and incorrect was made sufficiently apparent; and it has required no ordinary labour and research to supply the deficiencies which exist in a narrative commencing at so remote a period, and of which the authentic records and illustrations are so rare and difficult of access. These deficiencies Mr. Taylor has laboured diligently to supply; and he has accumulated a mass of information and a succession of illustrations on this subject, new as they are interesting. The subject, as he remarked, is not only one of curious inquiry to the musician, but possesses some degree of national interest, inasmuch as it involves the question whether or not the English can lay claim to what may be called a national opera?—a question which has often been hastily answered, but never, previously, subjected to a careful, elaborate, and patient examination.

We observe that Mr. Taylor is pursuing the inquiry on which he has entered ; and that a second series of lectures, embracing the period between the death of Purcell and the arrival of Handel in England, will be delivered by him at the London Institution, in February.

BIRMINGHAM MECHANICS' INSTITUTION.

THE principal feature of novelty in the conduct of this Institution, during the past quarter, has been the opening of a news and reading room, at the school buildings. The apartment so applied is of moderate dimensions, well lighted and warmed, and presents an air of comfort and good arrangement. The supply of newspapers, of course, is limited by the means provided by the amount of subscriptions ; but the probability is that the advantages derived from the establishment will soon cause an increase in the number of subscribers. The room is open every evening, from seven till ten o'clock ; the greatest order and decorum are always manifest ; and we have, at some of our visits, been pleased to see a game of chess silently prosecuted in one corner of the room.

The class studies proceed regularly and efficiently : the writing, arithmetic, and mathematics, under the care of Mr. Daniel Wright, whose judicious mixture of energy and kindness has given to these schools an aspect of order and industrious occupation which are gratifying to witness. In the drawing class, the services of Mr. Wright have been assisted during the past year, by the gratuitous attendance and very able tuition of a gentleman whose efforts to raise the character of the school have been crowned with success. The class for the French language, which had been previously attended, gratuitously, by a member of the Institution, is now under the superintendence of Mons. Martin, a professional instructor of eminence, on terms creditable to the liberality of that gentleman. The *extra* expense of this class is supported by an *extra* subscription on the part of its members ; and we are more and more convinced that the same course ought to be pursued in respect of the other classes. Education, like every thing else, may be offered too cheaply, to the deterioration of the article ; and we think that very few of the youth who embrace the advantages offered by a Mechanics' Institution, would hesitate to pay a small subscription quarterly, for admission into each class. These small subscriptions would, probably, cover the stipends of the instructors, and provide the classes respectively with books, slates, drawing-patterns, &c., while the sums now appropriated to these purposes, would be applicable to the liberal increase of the already valuable library ; and to securing the

services of lecturers of the first rank in the scientific world : thus reacting, by inducing the subscription of large numbers of respectable adults, whose quarterly payments would be well rewarded by attendance at the lectures and the library.

The office of President has been filled, during the past year, by Sir E. Eardley Wilmot, Bart., M. P., who has distinguished himself by his liberality, both in a pecuniary point of view, and in the sentiments he has ever expressed in reference to the Institution : and we have great pleasure in announcing that the Presidency for the ensuing year is accepted by Chandos Leigh, Esq., of Stoneleigh Abbey, whose enlightened views are well known, and point him out as peculiarly eligible for the office he has consented to fill.

During the last quarter, the following interesting lectures have been delivered, and, in the majority of cases, gratuitously :—Mr. Young two lectures on Astronomy, the conclusion of a course ; Rev. Edward Madeley on the Manners of the Ancient Romans, and on Pneumatics ; Mr. Hawkes Smith on Improved Cultivation—its social and moral tendency ; Mr. James Russell on Respiration, including a narrative of the discovery of a Toad in a bed of Sandstone, during the excavation for the Birmingham and London Railway, near Coventry ; Mr. Watts on Physiology, being the commencement of a course on the physical and intellectual powers of man ; Mr. Edward Taylor two lectures on the Music of the age of Elizabeth, illustrated by a select number of performers, led by Mr. Munden on the piano-forte.

Such are the objects which have latterly occupied the attention of the members. During the quarter which is now commencing, the course so liberally afforded and so carefully prepared by Mr. Watts, will be proceeded with ; and a series on the Physiology of Plants will be delivered by Mr. John Murray, of London, F. S. A., F. G. S., &c.

We give this list of subjects to shew that the committee take an enlarged view of the objects of the Institution. They avail themselves, to the extent of their means and influence, of the information to be gained by lectures on various subjects, generally interesting to the presumed auditory, as members of the great family of mankind, and not as individuals belonging to a class. We make this observation because many persons—not ill-informed or unreflective—in conversation, express themselves slightly, or half compassionately, on hearing that lectures, other than *elementary*, are delivered to a body of “mechanics ;” and because we find that public functionaries and statistical inquirers, on sending into the country strings of queries relative to the conduct of Mechanics’ Institutions, still perpetually fall into the same error—the error of imagining that the information offered must necessarily relate to the occupation of persons belonging to the “working class.” Now, we conceive this elementary knowledge, that is, elementary knowledge on the simple practical sciences—for that is what is meant—can scarcely be communicated in lectures. For such elementary instruction, *the schools* are

opened. The lectures are valuable chiefly as tending to invigorate and excite the minds of the hearers, by presenting some new and unwonted information, such as may awaken attention, and animate the faculties to energetic operation. We do trust that the great problem—the *equalization* of the advantages of intellectual culture—approaches nearer and nearer to its solution. Let, then, bodies of “mechanics” listen to lectures on the mysteries of physical science on the graces and glories of ancient art—on the venerable remains illustrative of ancient manners—and on the progress and pleasures of those elegantly recreative sciences, whose exercise is said, by the poet, to

“soothe the savage breast.”

Every lecture on such *humane* subjects, we hope and believe, brings us nearer the desired solution. The approach of the consummation may be slow, but it does approach, and the end will shew that no effort is lost.

LIVERPOOL MEDICAL SOCIETY.

SESSION 1835—6.

THE first meeting of this useful association, organized since January, 1833, and which already consists of upwards of seventy resident members, was held on the evening of Wednesday, the 7th of October, 1835, in the Royal Institution, when the following members were elected as officers by ballot:—*Presidents*, Dr. Carson, Dr. Baird, Mr. Worthington, and Dr. Banning; *Treasurer*, Mr. Batty; *Secretary*, Dr. Thorburn.

October 21.—Dr. Carson, jun. stated, to the Society, the case of a Dutch sailor, who had been exposed, in Holland, during the hot season, to exhalations from the marshes, and was affected with a cutaneous eruption of a most peculiar kind, somewhat resembling *rupia* or *psoriasis*. The most remarkable features in this case, were the loss of sensibility in the extremities of the fingers, and the scars or cicatrices (many of them a hand's breadth) which were placed in contact with a heated poker, and burnt, without the patient being conscious of the application at the time.

Mr. Bonner, the originator of the Society, called the attention of the meeting to two cases of severe injury, (one of a child who sustained a compound fracture of the outer ankle bone), the circumstances attending which, in connexion with the results of the treatment, were illustrative of how much Nature will do when youth is on the side of good surgery.

Two cases of intense squinting were communicated by Mr. Neill, and the particulars of a case of scarlet fever by Dr. Duncan.

A case of intermittent fever, characterized by some singular features, was described by Dr. Carson, jun., who designated this unusual and well-authenticated form of ague, which had yielded permanently to the exhibition of quinine, as a case of "*tertiana duplex duplicata*."

November 18.—Dr. Carson, sen., took the chair, when a communication, to prove "That the doctrine, maintained by Mr. Brodie, of ulceration of the cartilages being a *frequent* consequence of inflammation of the synovial membranes, is incorrect," was read by Dr. Murphy, and was canvassed by several members. Dr. Vose, and others, charged Dr. Murphy with having misrepresented Sir Benjamin Brodie's views. The essayist defended himself from this charge by simply referring to page 13 of the third edition of Mr. Brodie's work.

December 2.—An interesting case was narrated by Dr. Baird, from the chair, on which an animated discussion arose, with practical remarks by Drs. Vose, Duncan, Anderson, Carson, Edwards, and Thorburn.

LIVERPOOL

LITERARY, SCIENTIFIC, AND COMMERCIAL INSTITUTION.

At the request of the committee of this flourishing Institution, (of which see our introductory notice in *The Analyst* for October), Dr. Thorburn re-delivered the first of a course of lectures on the objects, advantages, and pleasures, derivable from a knowledge of Botany, with its applications to the arts, sciences, and purposes of life. The lecture was delivered in the spacious lecture-room of the Royal Institution, and, in addition to the subscribers to the St. Anne-Street Institution, there were present a numerous and highly-respectable assembly of visitors, clergy, and members of the Royal Institution.

Having made some prefatory observations, Dr. Thorburn adverted to the difficulty of determining what should form "the fittest subject-matter for a lecture introductory;" the partial, if not erroneous, views acted upon by many instructors; and having stated his reasons for preferring to *describe*, rather than prematurely to define, the ideas, scope, and relations, of the term "botany," he illustrated how extremely limited were the ideas commonly entertained, and which were not confined to the public, as to the intrinsic nature and bearing of the science, whose philosophical relations are boundless.

The proper period for submitting a disquisition upon, or entering on a summary history of, the rise, progress, and prospects of botany, was said to be at the close, not at the outset, of a course of lectures, which, if elementary, should, in the opinion of the lecturer, be so conducted as if the audience were addressed upon the subjects, or

bearings, of the science for the first time. Pythagoras's volumes published after his return from Egypt, whither he had travelled in search of science, were noticed in connexion with the estimate of the state of botany in ancient Egypt prior to the age of Aristotle. The parallel between the views entertained by the favourite pupil of the Stagyrite, Theophrastes, surnamed, on account of his eloquence, "the divine speaker," and one of the ablest of modern vegetable physiologists, was interesting as illustrating the reach of philosophy, and the profundity which characterized the conceptions of a practical sage, who propounded them, upwards of two thousand years before the birth of Christ, to the intellectual chiefs of the Greeks.

The causes influencing the decline of the science, during the Roman government, were alluded to, and the merits of the unjustly-reviled Arabians warmly acknowledged, as the nation by whose efforts the expiring embers of *philosophical* botany were kept alive till after the dark ages, when it was again cultivated in the north of Europe. With regard to medicine, philosophy, mathematics, and literature, the Arabians were characterized as having proved "even as a *Noah's ark* of preservation, when each and every department of general science, throughout a dreary night of centuries, was deluged in the sleep of the dark ages."

Dr. Thorburn proceeded to show what were the objects of scientific botany: and that the being able to name *any* number of plants could not be said, properly, to constitute a knowledge of botany: and, that one might have no ordinary pretensions to be considered as a botanist, though unable, in a drawing-room or parterre, or upon turning over the leaves of a *hortus siccus*, to name more than a few specimens of vegetable nature.

" ————— the well-directed sight
Brings, in *each* flower, a universe to light !"

From the objects, the lecturer proceeded to illustrate the applications of botany to the arts, sciences, and purposes of civilized life. By the French and Germans, *applied botany* is chiefly studied; and the lead was taken and is kept by these nations in almost every application of the science, as regards geology, agriculture, &c. The art of transplanting large trees, so as to enhance the value of property, and to communicate the appearance of an old family manor-house, to newly-erected country "seats," constituted one of the most prominent illustrations adduced at this part of the lecture. The instance of the transplantation, by one of the governors of Brazil—Count Maurice of Nassau—of an extensive grove of cocoa-nut trees, was mentioned; also, the similar, and occasionally successful, attempts of the luxurious senators of Rome, of Louis the XIV. of France, and of one of King Charles the Second's courtiers.

The benefits derivable from sound theory in the arts, were next considered, with the value of theoretical knowledge in economizing time, &c. &c. Lastly, after a series of practical illustrations of the

recent applications of botany in forwarding the progress of agriculture and commerce, the lecturer concluded with an exposition of the successful enterprise of the distinguished continental engineer, M. Bremontier, in reclaiming, from utter barrenness, *dunes*, or shifting sand-hills, along the sea-coast, by planting vegetables having peculiar roots, and afterwards sowing broom, mixed with the seeds of the sea-pine, &c. Every few years, such reclaimed wildernesses now actually yield a profitable harvest to the cultivators of these previously sterile tracts, by supplying the materials for an extensive manufacture of tar and resin to meet the various demands for purposes of general commerce, navigation, and agriculture. This successful enterprise of Bremontier's has been justly characterized as the most splendid agricultural undertaking of any age.

WORCESTER LITERARY AND SCIENTIFIC INSTITUTION.

LECTURE ON THE NERVOUS SYSTEM OF MAN AND THE INFERIOR ANIMALS, BY E. A. TURLEY, ESQ.

THIS gentleman delivered last year, in the Athenæum, a course of four lectures, shewing the effect produced on society by the propensities of attachment, combativeness, destructiveness, and secretiveness. The present lecture is a continuation of that course.

After some very apposite proemial observations, the lecturer said that, being moved by daily witnessing the distress and misery occasioned by neglect of the first principles of health, he meant to devote three lectures in the ensuing year to the moral and physical education of the body. He had, in his former lectures, endeavoured to shew that a nerve, or analogous structure, formed the link which united together animate and inanimate bodies, figuratively, termed the two great kingdoms of the earth. Bone is chiefly lime; blood chiefly water, with salts, carbon, and other admixtures; muscles are but carbon, nitrogen, and hydrogen: yet these, when united in one organized body, endowed with a nervous system, and put in action, become a living animal, gifted with sensations, instinct, mind, and capabilities, proportioned to its organization. As living creatures differ in their kind and in their instincts, so does a knowledge of their nervous system exhibit the laws regulating their instincts or different economies; and it is found that those animals which are formed with a more elaborate nervous system are, also, endowed with more complicated instincts, and exhibit, in their action, more evidence of their approach to reason. Mr. Turley had, also, in his former lectures, explained that the simplest nervous system consists of a few globules of whitish matter, endowed with sensation and motion; which globules are sometimes formed into a roundish knot, termed a ganglion. These ganglia are placed in different parts of

the body in the insect and reptile tribes ; but are collected together into one mass, named the brain, in the more perfect quadrupeds, and in man. And as the ganglia have each their own operations to perform, in the bodies of insects and reptiles, so, in man, each part of the brain preserves its own especial use, and the whole is moved by the will, or mind. The external examination of this astonishing structure, which is termed phrenology, affords satisfactory evidences, to a certain degree, of its laws and conditional functions. The lecturer here observed that the prejudices against phrenology have their existence in the minds of sensible persons, only through their not having sufficient leisure, or opportunity, to examine into the evidences, or proofs, of the system ; and their being led, too hastily, to imagine that phrenology leads to fatalism, by the substitution of an *organic necessity* in place of free-will and free-agency. On the contrary, he shewed that fatalism, by reducing man to the condition of a machine moved by an external power, extinguished the idea of sin and of moral responsibility, here and hereafter : a doctrine directly opposed to christianity, morality, education, and benevolence. But the influence of education controls our anti-social and dangerous propensities, and restrains our inordinate passions. Thus we derive from them, under this salutary direction and control, the great principles on which society is founded, and which contribute to its happiness and prosperity. “ If you admit in mankind”—say our opponents—“ a propensity or love for the destruction of animated beings, man must and may, kill his fellow without sin.” The answer is—certainly not. A father has an affection for his children, but it does not follow, having reason for his guide, that he must have the same, or an equal degree of affection for all children. His love of offspring is limited by reason and by various feelings. In like manner, if a man, from his destructive propensity, kills a fox, surely, he is not, from the same propensity, to kill his neighbour : he is not, in this latter case, obliged to commit this crime, any more than he is obliged to love all children alike, or to hate all animals equally with the fox. He is bound by natural and social ties, by laws divine and human, not to commit murder ; his propensity to kill is controlled by the laws of society, by religion, by morality, by education, and benevolence. Now, if education, morality, religion, and benevolence, can be, for a moment, supposed to have no influence on the mind (and to believe this would be to outrage all experience), then man must act by, or from, an organic necessity. He must, having the organization, kill all indiscriminately, wherever he can : and to this glaring absurdity, so contrary to the evidence of all human nature, does the idea of a supposed fatality inevitably lead.

The destructive and carnivorous propensity of animals is, in like manner, restrained and subdued by punishment and coercive training. This severe external discipline, which is to them what education is to man, calls forth their fear into a stronger action than their destructive propensity. Thus trained, a cat will walk about among pigeons, hens and chickens, without ever attempting to kill one of

them, being restrained from indulging her appetite by the terror of punishment. The setting-dog and pointer, in a wild state, kill and devour all sorts of game ; but their innate propensity is overcome by the force of a canine education, and they shrink from a dead hare or pheasant, *as food*, with as much repugnance as a man would from poison. The carnivorous and destructive propensity of the bear and the lion are thus controlled and subdued by discipline ; the former becomes a dancer for the amusement of children ; the latter opens his tremendous jaws quietly, to admit the head of his living keeper, who, without fear, and with safety, exhibits this feat for the gratification of the spectator's curiosity, and to prove the triumph of education over the most destructive of savage animals. The prodigious strength of the elephant is, alike, subdued by education, and he becomes a useful servant of man.

Mr. Turley proceeded to treat his subject under eight distinct divisions,—acquisitiveness, constructiveness, self-esteem, or pride, love of approbation, the occipital region, caution, the sincipital region, and benevolence. Beginning with the question, is there a propensity to acquire ? We all must admit there is ; and that, under the settled control of religion and the laws, it is the great incentive of ingenuity, industry, and genius, and the pregnant source of arts, manufactures, and commerce. We, also, must admit that, in its second degree, it becomes avarice ; in its third, theft ; on each of which, their effects on society, and their means of counteraction, he reasoned with peculiar perspicuity and force. The propensity to constructiveness he exemplified in the newly-invented steam gun of Mr. Perkins, the steam carriage of Dr. Church, the ingenious automaton chess-player, the model of Paris lately exhibited, the beautiful nests of birds, also recently exhibited, the houses of beavers, cells of bees, and webs of spiders and silk-worms. In man, its situation is just behind the angle of the eye-brow, beneath the temporal muscle. When large, it gives the head a squareness of front, as in the Chinese, who are noted for their ingenuity ; and we see, every day, persons who are never happy but when building is going on under their direction, or when they are constructing some novel contrivance with their own hands. On the contrary, there are some portions of the human race, who pass their lives in caverns and trees, without appearing to invent or construct a better dwelling. We must, however, in this organ, yield the palm of superior ingenuity in constructiveness to our French neighbours.

The second genus in the order of feelings comprises the **SENTIMENTS** ; and the first in this division is *pride*, or *self-esteem*. The situation of this faculty is at the top of the head ; and it is necessary to distinguish it from vanity, with which it is frequently imagined to be synonymous. Pride is the characteristic of the English nation, while vanity no less distinguishes the French ; and nothing is more common, in French theatres, than to see the Englishman's pride held up to ridicule ; as, in our theatres, the French courtier is made a jest. It is very amusing to be in a mixed company of

French and English, and to mark the obsequious vanity of the one people, and the stiffness and pride of the other.

The organ of pride, or self-esteem, is more generally found in man than in woman, and is, also, more fully developed in the former than the latter. Some dogs, and other domestic animals, are very susceptible of having their pride wounded.

Love of approbation.—The existence of a sentiment of *approbation*, or love of praise, cannot be doubted, in man and animals; and we shall not wonder at its being a propensity so powerful in its action, when we reflect how large a portion of the mental instrument it occupies. Its seat is among the other sentiments on each side of self-esteem. Attachment frames society; love of approbation strews the path of life with sweets. It originates our little attentions and politenesses, our emulation, love of glory, and public distinction, ambition and vanity. Even animals possess this propensity, as instanced in the parrot, the peacock, the nightingale, and cock, the French mules, and the horse. This organ is a fertile source of mental alienation, in its excess, as it is one of our greatest sources of excitement; and Mr. Turley said he never yet visited a lunatic asylum without meeting numerous unfortunate creatures its victims.

The lecturer here observed that, when the posterior part of the head is large in proportion to the anterior part, we find more vigour in the character. On the other hand, where it is small in proportion, we shall see the intellectual operations pursuing "the even tenour of their way," without those bursts of emotion and enthusiasm consequent on the warmer feelings. National character depends much on this organ. The French and English heads seem best illustrations of this fact. The French are more vivid and volatile; the English, more sedate and phlegmatic.

Cautiousness next came under the lecturer's examination. He observed, the situation of this organ cannot be forgotten; it is, in almost all heads, the widest part laterally above the ears. Cautiousness is the sentiment which seems to controul every faculty of man, to prevent harm from precipitate action, by calling up reflection. It is the balance wheel of the whole engine—the helm which steers our actions from the whirl-pool of rashness. Its office may be termed a sinecure, as to itself; but it is the active agent of all the other faculties.

Dr. Gall discovered the seat of cautiousness in a prelate, a person of excellent understanding, at Vienna, who owed his advancement to this faculty. Its moderate development produces a prudent and wise circumspection; its maximum, timidity; its absence, a rash and dangerous impetuosity. This organ, in its excess, is frequently the cause of mania in individuals, and the disorder always assumes a very marked character of suspicion in the patients, who are continually in dread of danger from every thing around them. Shy and circumspect animals, such as the stag, roe, pole-cat, otter, mole, and those which place sentinels, the chamois-goat, crane, bustard,

and startling, appear, from an inspection of their heads, to have an organ of caution, similar to that of man.

Having considered the organs which occupy the basilar and occipital regions, Mr. Turley proceeded to the *sincipital region*, which is the most ennobled and exalted, as it contains the organs that form our moral distinction from the brute creation. If we look at the two regions, upper and lower, we shall find that the size of the lower preponderates in mankind. There are some individuals diversely organised to this: but we shall never see a person whose moral qualities outweigh his other propensities, without finding the sincipital organ outweigh the basilar region.

The lecturer next considered the faculty of *benevolence*, which is situated at the most anterior part of the forehead. This propensity, when greatly developed, gives to the countenance a character of benignity, which we acknowledge by a degree of immediate confidence not unfrequently opposed to our worldly experience. It has been urged, as an argument against the cultivation of phrenology, that this science would be injurious to the interests of morality and religion. But, if we demonstrate an organ of benevolence, does it detract from our adoration of our divine creator to show the organ which he employs to call into action the feelings that we honour; than to believe, against demonstrative evidence, that the feeling exists, fortuitously, without an instrument for its active manifestation? We need not be alarmed about consequences until we have examined if such things as the organic causes here alleged really exist in nature, if they ever have existed, or if they have been merely created by the fancy of phrenologists. If we find that they have long existed, and that mankind, wherever discovered, testifies their existence, we may be assured that those faculties *cannot* be given for our injury—they cannot have any evil tendency. We find nothing in the economy of animals that bears the least resemblance to religion or morality in man. We see the feeling of attachment strong in animals, but there is no sign manifest in them of their having any sense or instinct of a Creator. Religion is a blessed prerogative peculiar to man. There are some dogs mild and docile, others ferocious and indocile, and we can distinguish these physical rudiments in examining their skulls; but yet this does not seem analogous to morality. In one well-disposed and docile tribe of monkeys, the part of the brain destined to benevolence of disposition, is found to be prominent; while in another savage and malevolent class of the same race, its absence is remarkable.

Wherever charitable institutions are numerous, in a kingdom, a county, or city, like our own, we may easily infer the national, or local, existence of benevolence, in an extended degree. The christian religion, the divine precepts of our meek and benevolent Saviour, teem with fervent appeals to this faculty.

The emancipation of the Negroes last year, by the exertions made in the United Kingdom, is a proud monument of the triumph of benevolence over the lower and selfish propensities; and cold

indeed, must be that heart which did not leap for joy at their deliverance.

Mr. Turley's luminous reasoning on the connection of physiognomy with phrenology, is here, through want of space in *The Analyst*, wholly omitted. The lecture occupied more than an hour ; and in its course, and on its conclusion, was repeatedly greeted with applause. There was not a whisper of dissent noticeable ; and it may be not unreasonably inferred that the unanimous approbation resulted from a concurrence of opinion. The mode of argument was well calculated to elucidate the profound physiological science comprehended in this very interesting subject. The oral evidences were successively illustrated by a series of portraits, the size of life, exhibiting, in striking contrast, the various gradations of high and low character—of intellectual grandeur, narrow mind, and criminal depravity,—as connected with the conformation of the skull and development of the brain. There were, also, a number of plaster heads, as additional illustrations, submitted to inspection. These casts were marked with the division of the propensities ; and on each, as it was held up, the lecturer pointed out the local seat of the particular propensity under immediate notice. These portraits and casts, and the researches displayed in the exposition, evinced the deep study bestowed on the subject. Those evidences are now submitted to the public, and all classes are interested in affording them a dispassionate consideration. As the benefit of mankind is the object, open discussion must be a public advantage : and the friends of truth, on either side, have powerful motives for promoting a calm, impartial decision. No person of candour and good sense will reject a proposed improvement, without full and sufficient inquiry ; nor persevere against an unbiased refutation. The inestimable value of education is a general theme, and, in the late session, it occupied the wisdom of parliament. Perhaps no system ever offered to the world, opened a more important field for investigation, than the probable effect of phrenology on education, morals, and manners.

CRITICAL NOTICES OF NEW PUBLICATIONS.

Elements of Bedside Medicine and General Pathology ; with a sketch of the origin, progress, and prospects of Clinical Medicine and Surgery, exposition of the creeds of Materialism and Vitalism, a confession of mixed medical faith, &c., by J. Stewart Thorburn, M. D., of Liverpool. 8vo., pp. 437. Longman & Co., London.

SYDENHAM, on being asked, by a citizen of London, to recommend a course of medical studies for his son, replied, "Send him to the bedside ;" thus, immediately referring him to the study of nature—the only source of truth. His recommendation to one inquir-

ing of him what works were best adapted to qualify him for the practice of medicine—viz., to read *Don Quixote*—has been seized upon, by “mere practical men,” as they are called, as a proof of his contempt for medical literature in general. But, as the recommendation came from one eminently versed in the opinions of his predecessors, and perfectly estimating their fantastic and air-built creations, he may rather be supposed sarcastically to recommend for them a similar purgation to that to which Cervantes subjected the prevalent literature of his age. The medical treatises of this great man, at the same time that their existence practically refutes such inferences drawn from words hastily and carelessly let fall, contain in them internal evidence that his zeal for the observation of nature was founded on, as directed by, a familiar acquaintance with the best medical literature of the day.

If we consider the qualities, moral and physical, whose perfection the investigation of disease imperiously demands, and the range of collateral science requisite to constitute a good observer of the operations of nature, we cannot too strongly insist on the propriety of Dr. Thorburn’s recommendation, in the commencement of the volume under notice, that an advanced period of their medical studies should be appropriated, by students, to their hospital practice. Were this recommendation more generally followed, we should not so often see the walk of the hospital converted into a morning lounge; almost justifying the propriety of the expression which levels this important part of the study of our profession with the mechanical operations of the military drill.

The following are pertinent observations upon the above subject, and we extract them as further presenting a fair specimen of the style of the volume :—

“*Should pupils be indiscriminately admitted to the Clinique?*—Various benefits would result were observers not admitted to the clinique, till after profiting by a determinate order of study. It would then become a matter of ambition, with the majority, to come, at least, up to, if not to exceed, the standard enjoined. Many, it is to be feared, are hospital PERIPATETICS, rather than clinical observers. Nine-tenths of students prematurely “walking the hospitals,” either imbibe erroneous notions, or, from inability to appreciate what passes, get disgusted or indifferent to what, when rightly conducted, constitutes the most interesting of all their studies. Moreover, by pursuing at the outset—and the chances are that he *will* pursue—a faulty method, the pupil contracts loose and careless habits of observing, and thence self-duped, ends by deceiving or misleading others. The ludicrous and painful differences of opinions, which three or more practitioners will pronounce respecting the same case, at a consultation, are surely chargeable, much less to the fact of medicine being a science of probabilities, than to difference in the powers of attention, perception, comparison, and judgment; and, above all, to the different degrees of discipline to which these powers have been submitted. Hence, the necessity that all intending to practise medicine should study under trained masters; hence, likewise, it is that young surgeons and physicians hived off from the great schools, where BED-SIDE MEDICINE is systematically taught by able professors, possess infinitely more *experience*, properly so called, than many who have been thirty years in private practice. Years are not the measure of experience, as frequently

reiterated during the last two centuries. Experience depends not upon the length of mere animal existence, but is determined, says Bacon, by the manner in which one spends his *hours*. What the public understand by medical experience is furnished (how dearly !) at the expense of many. Let students, therefore, bear in mind that the healing art can only be correctly acquired from clinical professors and the sick ; and that every thing—even the art of seeing—is difficult in medicine. How many at the bedside see, or think they see, and yet do not perceive ! Fully as many hear, who do not understand.” —pp. 44—45.

The science of medicine, like every other, has been impeded in its progress by hasty generalizations from few and ill-observed facts. Till of late, its history has been that of the conflicts of theories thus formed, energetically thundered forth by the teachers in the school, and adopted, with corresponding enthusiasm, by the student. The only use of observations made at the bedside, was, with some illustrious exceptions, to seize on such facts as could, with least difficulty, be forced into the “Procrustean bed” of a peculiar theory. The aid of the Baconian philosophy, though not immediately generally adopted in the schools of medicine, yet had an early influence in forming the medical character of some of our best observers. To such early and ardent investigators of nature, we owe the clinical medicine, *as a science*, when they first taught us to examine the phenomena of disease, and to observe their progress with minds unbiassed by prejudice.

In a well redacted history, from various and authentic sources, of the rise, progress, present condition, and prospects, of clinical institutions, Dr. Thorburn has given an interesting account of the most eminent medical and surgical cliniques at home and abroad ; and has judiciously pointed out those peculiarities in each worthy of the student’s attention. We strongly recommend to perusal those passages in which the mania for operation-hunting is so deservedly deprecated by our author :—

“To young minds, there would seem to be something very attractive and captivating in the bold and dashing manner in which the great operations in surgery are performed by metropolitan knivesmen. The general education and consequent efficiency of pupils in after life, are seriously marred by the effects arising from the exaggerated ideas of the value of operative medicine, with which very many of them become impressed. The lecture-rooms at the universities and schools of medicine are deserted, or are unseasonably quitted, and the order of systematic study disturbed, on the slightest rumour of there being—‘an operation to-day.’ Students, who, from certain habits of thinking and acting, never so much as, perhaps, perambulate the wards, during one out of the three regular visits, make a point of conveying themselves to the surgical amphitheatre, and, if possible, of there taking up a commanding position, in the front ranks, on *FIELD DAYS*. For some time, after seeing a calculus extracted and held up to admiration, within forty or fifty seconds after the patient has been bound or tied to the table, the neophyte’s attention probably becomes so engrossed with the subject, that, to the neglect of his other studies, nothing is thought of by day, read during the evening, or dreamed of at night, but the anatomy, surgery, and the successive steps of the operation for lithotomy. Moderate reflection, it might be supposed, would satisfy even the youngest students, or, at least, the directors of

their education, that the attracting operations for aneurysm, stone in the bladder, excision of the lower jaw, wholly or in part, or for the renewing or re-creation of noses, &c., though in themselves, doubtless, most worthy of some share of his attention; yet, for once during an entire life of provincial practice, not two, out of three or four hundred surgeons, are called upon to perform such operations. For the minor operations, however, the services of the young practitioner are again and again required. These are undertaken with hesitation, and a fear of being foiled, because of their never having previously been attended to. How glaring the evils, then, of students, when at college and entered at the hospitals, attending chiefly or exclusively to the great operations! Many are to be met with, settled for practice, who are ignorant of the proper mode of applying the *tactus eruditus*, and of the period when the *areola* should show itself, after vaccinating an infant with effect, and of the accredited characteristic marks of the consequent genuine cicatrix. Not a few may be familiar with the calculations of the occasional anomalous distributions of the arteries, and quite *au fait* in the successive steps of such capital operations as tying the subclavian and internal iliac arteries, cutting for stone, trepanning the skull, &c., who, nevertheless, are found literally ignorant of the relative and surgical anatomy of the blood-vessels and nerves concerned in the minor operation of venesection, at the bend of the arm—an operation the performance of which is so frequently required, and during which serious accidents may occur, either immediately or in the course of some hours.”—pp. 93—95.

As intimately connected with the interests and prospects of medicine in this country, the constitution of the charitable institutions are freely and boldly discussed; their defects are pointed out, and the right of *government interference* in their management justly insisted on. These charities—whatever may have been their original constitution—ought, as far as is consistent with the interests of the patient, to be accessory to the advancement of science; and we boldly assert, that that interest is not incompatible with the most free access of medical men to the bedside. The administration of charity to the healthy or sick poor, is a subject of such extreme nicety, that, involving, as it does materially, the best interest of society in general, we trust that the day is not *very* remote when all such institutions shall be subjected to one uniform and general regulation, setting aside altogether the theoretic views of the founder, and merely appreciating the motives; which, of course, were the benefit of the community.

We have thus far had great pleasure in according our meed of approbation to the volume under review. But to the presence of the whole of the SECOND PART,* on which Dr. Thorburn has evidently expended a great deal of ingenuity and observation, we object altogether, in a work having for its object the introduction of a pupil to a course of clinical observation. We do not at all see the necessity of a medical creed on any point, either in the student or the professor. On the contrary, we are convinced of its extreme impropriety, and cannot help being struck by its inconsistency with the bold vindication of the Baconian philosophy, in the preceding part of the volume. Faith in any thing not comprehended—except

* The volume consists of four parts.

well authenticated revelation—instead of a virtue, is a weakness of the mind. The question in dispute between the materialist and the vitalist is simply this: Is the construction of organized matter, out of simple elementary bodies, and its conservation in opposition to the continued influence of external agents, explicable by the laws to which matter in general, is subjected? To this, the sceptical materialist—commencing with a confession of ignorance—*conjectures*, that were we perfectly familiar with all the physical agents, and able to appreciate their influence, such *might* be the result. Whereas, the dogmatic vitalist, ashamed of the immense extent of this ignorance, and too lazy to await the revelations of nature, turns away from the true worship, and pours forth his confession of faith in vitalism—the golden calf of his own imagination—the heathenish impersonation of the cause of his difficulties. To what consequences has this dogmatism led? To it we are indebted for the “Gods” of the ancients, the “*anima mundi*,” “Nemesis,” &c.,—the idle excuses for ignorance. How necessary, then, even yet, the advice of the poet—

“Nec Deus intersit, nisi dignus vindicæ nodus inciderit.”

On what we have said on this subject, we protest against the construction being put that we are materialists, in the ordinary sense in which that word is used. We only conjecture that ordinary physical causes may explain operations which exist in bodies, as plants and the lower orders of animals, in which no one imagines the existence of a soul; and which, also, existing in the higher order, as man, are evidently carried on without being subjected to the influence of the soul. Our convictions on the immateriality of the soul, and its immortality, are based on a higher order of evidence, which is strongly confirmed by these two conditions not being inconsistent with reason, and by the belief in them being of vital importance to the moral development of man.

Medical creeds are of no use in the practical applications of a science founded on the observation of facts; and they have a tendency to limit those bold ranges into the undiscovered territory of nature, to which we are indebted for the most valuable portion of her secrets. It is but justice to Dr. Thorburn to admit that, in this part of his work, we have everywhere evidence of extensive reading and ingenious reasoning; and, also, that we have derived considerable information on the opinions of authors, whose books, otherwise than so summarily digested, we have no great inclination to enter into. We can even offer some apology for the diffuseness with which he has thought proper to treat the subject, considering the importance which the different schools attach to an early establishment of the student's faith in their own creeds, and the avidity with which pupils apply to the study of subjects upon which fancy may revel without the obtrusive check of well-established and distinctly-limited inductions. A second perusal induces us to believe that the author would lead the student, though in a round-about way, to the same con-

clusions which we have attempted to establish ; namely, that opinions on those subjects should be formed on a very extensive induction of facts, and that, instead of being early and forcibly impressed on the tempered wax, they should ever be worn so lightly as in no way to influence our judgment on any subject.

In PART III., the author enters more particularly into the qualities, moral and physical, requisite to constitute a good observer ; and examines how far, and in what way, education may be directed to their improvement. We are happy to find a complete justification of our remarks on the preceding part.

The subjoined extract delineates the influences of prejudice on the young student, and points at the value of "philosophic doubt :"

"To remount to the primitive causes which produce prejudice in the minds of the greater portion of mankind, and which prevent them from observing well, would, doubtless, be an interesting research. Gueneau de Monbeliard correctly attributes it to the numerous prepossessions inculcated by education. No sooner, he says, do our eye-lids open than prejudice envelops us in her shade ; her indistinct murmuring is the first sound that breaks upon our ear ; and our first regards are jaundiced by error. As our faculties are developed, prejudice fastens upon them, and strengthens with our strength. Not only does it falsify the evidence of our senses, but it also enfeebles the glimmering ray of our reason. If it presented falsehood only—more especially if it presented it when reason was matured—its venom would be too gross, too slow of operation, to be very dangerous. But as it is, so to say, identified with the very germ of our knowledge—as it unceasingly presents falsehood and truth confusedly mingled, and divested of their distinctive characteristics—it troubles our ideas, it warps our judgment, and compels us to receive, as in-born truths, errors of a within-us earlier growth than our reason itself."

"To hinder prejudice from deeply rooting itself in the mind, and, so, to for ever block up the path of truth to the observer,—no better preventive can be found than a union of scepticism and philosophical distrust. These two rigorous antidotes may also extend their influence to the prevention of errors, to which confidence and self-esteem might lead, when indulged beyond their proper limits. Genius inspires confidence, and too frequently banishes the salutary fear of self-deception. Man naturally delights to repose on his own abilities, and to receive, as true, those ideas with which he is pleased."

A systematic mode of interrogation is recommended, and the invigorating influence of *journalizing*, or registering observations at the bedside, is strongly insisted on. Upon this subject, we recommend the following suggestions to the attention of students :—

"The inquiries to be made, with regard to a patient seen for the first time, are reducible to the following points :—

"1. To describe the actual condition of the patient, by noting symptoms which are manifest to the senses—the suffering he experiences,—and to analyze the condition of the various functions.

"2. To ascend to the origin of the disease, in order to contrast its present with its former state. For this purpose, we should ascertain the peculiar character of the attack, the period of the manifestation of the existing symptoms, and what remedies have been already administered.

"3. To seek for the excitant and predominant causes. These will be found in the patient's profession or trade—in his mode of living—in acci-

dentials, anterior to the existing malady—in his previous state of health—and sometimes in maladies to which his family are particularly liable.

“The end proposed, however, according to Pinel, may be obtained by means much more simple and direct. If the patient’s mind is in a sound state, he may be at once interrogated as to the pains and affections he *feels*. If he is delirious, or incapable of exercising his mental faculties, the information desired may be derived from those who surround him. Inquiries may next follow, as to whether the seat of the disease be in the head, chest, or abdomen.

“When a certain number of observations have been thus sketched out, the student may advance to the study of the progress of diseases, beginning with the acute,—carefully remarking their several periods of advancement and decline, and not forgetting their terminations, whether favourable or otherwise. All confusion may be avoided by confining the attention to *ONE malady at a time*, and studying it in various individuals. The influence which air, regimen, place, and moral affections exert upon the disease, should also be accurately noted, and mention made of its crisis, metastases, morbid transformations, and so forth. The observation may then be considered complete, if it include daily expositions (if an *acute* disease) of the most important morbid phenomena, from its commencement to its termination.

After having collected cases of simple maladies, the student should proceed to the clinical study of complicated ones—to those, namely, which present two or three orders of symptoms appertaining to different affections. He should redouble his carefulness in avoiding disorder and confusion, while proceeding to the exact separation of the signs of each of the diseases before him, and remarking the several circumstances which have produced the complication. As to ultimate arrangement, it is advisable to at first inscribe, *upon a loose sheet*, all the phenomena, signs, or symptoms offered to his observation, and afterward select those which are characteristic of the maladies composing the complication. For this difficult and complex task, the observer ought to choose *acute*, and leave *chronic* diseases for subsequent study.”—pp. 295—6.

PART IV. consists of a redaction, from various sources, British and continental, of the general appearances under which disease presents itself; with an attempt to appreciate the influence of each particular symptom.

We cannot terminate a review upon the subject of bedside medicine, without bearing our individual testimony to the excellence and liberality of the arrangements offered for its study by the French; and, also, without acknowledging the debt of gratitude we owe to them for the information we have thereby acquired. All Europe rings with the fame of Dupuytren. His admirable *Leçons Orales* recall to his pupils the rapidity and accuracy of his analysis of disease—the extent of the resources which he opposed to its progress—and, above all, the clear and familiar eloquence with which, in the Amphitheatre, he explained and enlarged upon his views. To the medical clinique, Chomel, with every qualification necessary to the most minute investigation of disease, brings an extensive information on the various theories which, unbiassed by prejudice and with a rare conscientiousness, he subjects to the test of a long-continued series of observations.

In conclusion—We can, with safety, recommend to perusal Dr. Thorburn’s work, as a well-selected digest, drawn from a variety of sources, correctly estimating the value of clinical medicine, and pointing out the true mode of attaining perfection in it.

The Earth. The Air. The Heavens. By Robert Mudie. 3 vols. Ward & Co., Paternoster Row. 1835.

WE have rarely seen publications of more transcendent merit than these last productions of Mr. Mudie. He has simplified, and reduced into three small volumes, the essence of the most comprehensive works on these important subjects, and unravelled the mysteries of those parts of science which, excepting to the illuminated few, have hitherto been enveloped in the clouds of mystery. His mode of instruction, too, is so clear and explanatory, so comprehensible to even the weakest understanding, that ignorance, or a merely superficial knowledge, of these luminous topics, will, in future, be unpardonable in every branch of respectable society.

In the volume entitled "**THE EARTH**," the author has supplied that information which will in vain be sought for in any one book, and probably in any number of books, which have been hitherto published. He has succeeded in giving as clear and comprehensive a view as possible of the earth, considered as a whole, having equal regard to the causes or agencies which produce the more general terrestrial phenomena; and has pointed out the great practical advantages which are derived from a proper knowledge of the earth, and the characters and relations of the several seas and lands of which its surface is composed. After glancing over the various lands, and the seas by which they are separated, the author has clearly shewn the general character of each of the great natural divisions of the land, and how they work together in bringing about all that occurs by natural causes. Then follows some account of the agents and instruments which are chiefly influential in producing terrestrial phenomena. Of the first, the grand agent is the sun, and the grand instruments are, the air of the atmosphere and the water of the sea, which distribute the solar action over the surface of the earth. With a view to simplify this sublime and important matter, Mr. Mudie has first considered what would be the general effect of the sun upon a hemisphere of the earth, if both sun and earth were at perfect rest, situated at the same distance from each other as they are now, and if the sun-beams had precisely the same nature as they have at present, but that there were no moveable air or water, or any marked difference of surface, to modify their action. This, he remarks, is the elementary view, and the determination of it is a matter of geometry, partaking of all the certainty of that science; this being once understood, the observed departures from it of themselves lead to the investigation of their causes. The full statement, or even the mere enumeration of all those causes, more especially the local ones, would have been incompatible with the space to which he was restricted; he has, therefore, considered chiefly the two general sources of modification—the daily rotation of the earth upon its own axis, and its annual motion round the sun in its orbit. By means of these, he has been enabled to state generally the effect which is produced by the reciprocal actions of the

two hemispheres upon each other at different seasons of the year ; and, also, how those actions are further modified by some of the more remarkable characters of the extensive divisions of the land, and thus has presented a general view of the phenomena of the year. "My object is not, however," Mr. Mudie observes, "to teach scholastically, but to entice the reader to learn for himself, practically, pleasantly, and profitably ; to stimulate the desire of knowledge, and to simplify the means of acquiring it, as well for the satisfaction and superiority which true knowledge gives us in this world, as for the confirmation which it affords of the fulfilment of our best hopes, when to us this world shall be no more." And well has Mr. Mudie performed his important object. May the results equal his expectations, and the light which he has shed on this branch of science be extended throughout all nations, and never again be dimmed by supineness and ignorance.

These are the general heads merely, under which are ranged all the minute particulars essential to the elucidation of each specific subject. The history of the earth is a long and interesting one, but as it is so intimately connected with the Air and the Sea, it will of course be necessary to possess the three volumes as references to each other. We here enumerate a few of the leading sciences, the union of which constitutes the natural history of the earth :—geography, natural and physical, zoology, botany, mineralogy, geology, meteorology. It will thus be seen that the latter, for instance, more particularly belongs to the volume on Air—but they are so blended, that they should be considered one entire set, which it would not be consistent to separate. Nor will any reader, scientific or superficial, we predict, on perusing one volume, be willing to confine himself to that volume. The general opinion will be, in which ours agrees, that the entire work should have comprised at least six volumes, instead of three, as the work of compression would not then have been so close, and its intelligence would, consequently, have been more diffused. We do not now make extracts to shew the style and manner of the publication, because the length of these remarks have so much pressed upon our room ; but in a future number we may doubtless be tempted to prove from the context, that our praise is not the dictation of partiality, but of literal justice. The plates, in Baxter's oil-colour printing, are most exquisite specimens of a newly-discovered art, which cannot fail to be generally admired.

THE AIR.—In this volume, the author does not assume that he has succeeded in bringing the subject of this most interesting fluid in those broad and general features which shall render a reference to other sources unnecessary ; but he has certainly made the road so smooth and open, that a little diligence only is required to attain all the knowledge essential to the clear understanding of the atmospheric fluid. We need not point out the difficulty against which the unlearned have to contend in obtaining such a view of this subject as shall enable them to see at once the nature of the different parts,

and their relations to each other. When we find the mechanical properties of the air made a distinct science, under the name of pneumatics ; the chemical properties in the different pages of the book of chemical science ; the relative actions of the air in different parts of the world, and at different seasons of the year, discussed as portions of physical geography ; and its relations to moisture, heat, and motion, designated as "the weather," and its use in the economy of plants and animals, regarded as a separate science, under the name of meteorology—extensive as this list undoubtedly appears, it contains only a few of those divisions and subdivisions into which, for the purposes of accurate science, it is necessary to arrange the doctrine of the air. How deeply indebted, then, ought we to be to an author, who transfers to the general reader as much of this knowledge and its results, as shall suffice for the purposes of rational conversation and right understanding of the varied appearances and changes of the atmosphere, and their effects upon the living world? The plan which the ingenious author has adopted he has thus developed:—"I have taken first in order those properties of the atmosphere which appear to be the most simple, and the most in accordance with our common modes of thinking and expressing ourselves ; and having done so, I have endeavoured to see how far each one would carry us in the connection with that nature, the general understanding of which is, of course, the ultimate object in all inquiries of this kind ; and, if I found that recurrence to any one subject would either help to explain another, or serve to point out the general connection, I have not hesitated in making that recurrence ; though, as I have not, to my knowledge, attempted a double explanation of the same phenomenon, those recurrences will not be found to have the character of repetitions. After all the care I have taken, it is probable that the work may be faulty, even so far as it goes ; and from the limits within which, in point of mere space, I had to confine it, it must of necessity fall short of the very elements of the subject. But I believe that, in plan, and partially, also, in subject, it is entirely new ; and though novelty is no plea of justification for error, one does not get so smoothly or rapidly over the ground when the path is untrodden."

The third volume is that dedicated to "THE HEAVENS ;" and, although the subject is necessarily of a higher order, we here find all the raciness, well-disposed arrangement, and extensive research, of its companions. Fully convinced, the author asserts, that there is a popular road to the knowledge of the heavenly system, which is both short and easy, he has endeavoured to make this volume a finger-post in this delightful path. "I have done so," he states, "not by describing the end to be arrived at, but by attempting to describe the way ; and I have endeavoured, regardless of whether I myself shall or shall not be considered informed upon the subject, to lay hold of and explain, with some breadth of expression, and with as much familiarity of style as appeared at all consistent with the nature of the subject, those great principles which I have found, by

experience, to be the chief stumbling-blocks in the way of those who seek popularly for instruction. * * * I have endeavoured to point out how, by the application of those common means of measuring and of weighing with which every one is familiar, we may arrive at a knowledge of the distances, the magnitudes, the masses, and the motions, of all the heavenly bodies, or be able to state, with certainty, that their distances are beyond all mensuration. I have endeavoured, for the first time, I believe, to explain, in common language, the law of the planetary motions; to analyze the balancing forces which sustain the heavens into their simple elements; and to show which of these elements are constant, and which admit of variation. * * * In order to get a foundation, I have shewn, using some diagrams in illustration, the impossibility of the earth being a plane surface; I have endeavoured to point out the errors of distance, magnitude, and motion, both on the earth and in the heavens; I have attempted to shew, from first principles, the nature and stability of motion in an elliptic orbit; and because I have always found the change of distance and of rate which takes place in the perihelion and the aphelion to be one of the perplexities, I have laboured this point with no inconsiderable degree of attention. If the reader shall collect and carry forward the remarks as far as the ninth section, he will be able to see how the general principles are made to bear upon what is practically observed; and that our knowledge of the heavens, as expressed in numbers, rests on a surer foundation, and is as accurate, as any similar expression in the most familiar business of life."

Thus clearly and concisely does Mr. Mudie expound his object, and we must say that he has carried it into effect, throughout the whole of his pages, in a style the most lucid and convincing. Ten sections comprise the analysis of the contents, and they form a mass of information and instruction which it would be difficult to find equalled in any other single publication, however voluminous. The typography is extremely neat and more than usually correct, and the general appearance is, altogether, of a very superior order. This volume, which corresponds with the others, is, also, illustrated with a frontispiece and vignette, in which Baxter's beautiful art of printing in oil colours is shewn to peculiar advantage.

On the Natural History and Classification of Quadrupeds. By Wm. Swainson, A. C. G., F. R. S. & L. S., &c.: forming a vol. of *The Cabinet Cyclopædia*. London: Longman & Co. Paternoster-row, and Taylor, Upper Gower-street. 1835.

INDEPENDENTLY of the correct and admirable classification which so pre-eminently distinguishes this volume, there is a philosophic spirit breathing throughout its pages, which few writers on this interesting subject have introduced with such cogent and felicitous effect.

The first Part, comprehending the great divisions of organized

matter, and the relations which quadrupeds bear to other groups of the animal kingdom, is full of instruction and interest—and from the forcible chapter, treating on primary definitions, on matter, time, and space, and the station of man in the creation, we shall now principally confine our comments.

Locke asserts, that every thing which the mind of man can conceive is either intelligent or unintelligent. “Of intelligent beings,” Mr. Swainson, in his primary definitions, remarks,—

“There is but one universal, primary, and continuous cause,—God, in whose hands is the life and being of every thing. From the will of this great Omnipotent has emanated other intelligent orders, created, indeed, and, therefore, incontinuous; but whose entire nature, being spiritual, is incorruptible, and who have been destined, by their Creator, to live in that state for ever. Following these purely spiritual beings, is MAN, whose essence, or soul is immortal, but whose substance, or body, is material and corruptible. These, for a season, are united; but the Creator of the human soul has declared, in language the most unequivocal, that it will continue to exist through the countless ages of eternity; and finally, that, by obedience to the conditions HE has revealed, it will be united, so to speak, with the purity and holiness of Him from whom it proceeded. Neither revelation nor reason can suggest to the mind any other order of created intelligences than these, although each contains its own internal or component qualities; one of these, for instance, is the Godhead itself. * * * Of unintelligent beings, we can conceive, in like manner, but of three sorts; namely, matter, time and space. Matter is incontinuous, but time and space are not so; for there never was a time in which there was no time, or a thing which did not occupy space. * * * Time and space are eternal; for it is impossible to conceive them otherwise than as coexistent with the Deity. All time is His duration, and all space is filled by His presence: they are evidently not causes; yet we cannot understand how they can be effects. Thus, as it has been well observed, we come to the inconceivable conclusion, that they are neither causes nor effects. Their definition, in fact, is so difficult, not to say impossible, that, inconsistent as it may appear, those philosophers who have relinquished the effort in despair, are those who have the greatest knowledge on the subject. Looking collectively to the three great divisions of unintelligent beings,—time, space, and matter,—we shall find that the latter is equally incapable of strict definition. Each, in fact, can be judged of only by its properties. Time and space may be divided, yet they are continuous; for it is impossible that one of these divisions can exist without being connected to others; but every mass or particle of matter may be isolated, and so exist without other parts. Time and space are capable of mensuration; but to space is added the property of figure. Matter is the same, but is at once distinguished from time and space by being incontinuous. Of time we know but of three primary divisions, which we distinguish as the past, the present, and the future. The first and the last are incalculable, for they are eternal; while the present is but as a connecting filament to each. Space, in like manner, may be broken into infinite portions; but of its first great divisions we know nothing more than can be dimly gathered from certain passages in revelation.”

The nature and division of matter, organic and inorganic, are next considered, and some curious inferences gathered from the foregoing definitions, are deduced with much subtlety and plausibility. The station of man as an intelligent being, the author has clearly pointed out, and has taken much pains to separate the palpably in-

congruous affinity of man with brutes, adopted by Linnæus, Cuvier, Macleay, and other celebrated philosophical writers. There is not merely an innate repugnance, but an absolute disgust and abhorrence in every human being, ignorant or enlightened, against the admission of this relationship. So sensible was Aristotle of this repugnance, that, in his system of the animal world, he excludes man entirely from his scheme; and his example has been followed by Willughby and Ray. In man, therefore, this enlightened writer observes,—

“We behold that creature which connects those two primary orders of beings, the intelligent and the unintelligent. He is, by far, the lowest in the scale of the first; yet to that circle of spirits he unquestionably belongs. He is one of them, not as a proscribed and degraded race, to be cut off from all fellowship with the heavenly hosts, and with the bare claim of immortality to sanction his admission into their order; but he is offered the means of *restoration* to what he was in that golden age, when he conversed even with the Highest Intelligence, and was the companion of angels. This restoration will place him again in direct communion with those beings to whom, by his immortality, he is legitimately connected. He will be, on the one hand, ‘like unto the angels;’ and on the other, his spirit will be united to the holiness and purity of the Omnipotent. Here, then, are the true affinities of renovated man. * * * Let us but look to the life of the Butterfly, and then ask what naturalist would think of classing it among apterous insects because, *in its first and lowest stage of existence*, it is a wingless grub?”

It may be said that most of these expositions and theorems have been before promulgated, in some shape or other, by writers on this branch of philosophical inquiry; but, allowing that to be partly the case, they are distributed amongst large and unwieldy works, and Mr. Swainson judiciously availing himself of the best authorities, ancient and modern, has not only embellished them with his own enlightened and penetrating observations, but added much original matter to the stock of ideas already disseminated. In fact, his commentaries have an air of such originality and genius, that, altogether, they appear more the result of pristine contemplation than such as are collected from the gleanings of authors. Truly may it be said that there is no subject which has not been investigated by lettered men; if, therefore, an author speak on any given theme, he may be accused, by the unreflecting, of having merely dilated on the conceptions thrown out by a previous writer; but we hold that he who brings a discriminating judgment, high genius, and strong mental powers, to the further and more clear development of a topic already freely discussed by others, but not positively set at rest by its conclusiveness, is equal, in literary pretensions, to him who, by chance, first opened the road to inquiry.

We regret that our space will not permit us to examine this work further; possibly we may, in a future number, again refer to it, and shew the care and aptitude with which “*The Natural History and Classification of Quadrupeds*” has been drawn by Mr. Swainson. At present, we are compelled to quit the subject, not, however, without first strongly recommending this interesting publica-

tion to the attention of those who are desirous of becoming conversant with this now fashionable, but, hitherto, too much neglected, branch of study, in the easiest, the most intelligible, and the most persuasive manner. The volume altogether, like the antecedent ones, in its typography, its wood engravings, and its general appearance, is a model of taste, correctness, and neatness.

The Phrenological Journal and Miscellany,—No. XLVI. Published Quarterly. Anderson, Edinburgh; Simpkin and Marshall, London: December, 1835.

THE title of this periodical will disclose the chief subject matter of its contents. It is a quarterly miscellany, the produce of the Scottish capital, and, like most of the publications emanating from that source, is intelligent and amusing. As a specimen of its matter and style, we now select two passages from an article on a "Proposed Association for the Advancement of Mental Science." It appears that the Phrenological Society of Dublin, seeing the popularity and success of The British Association for the Advancement of Science, have determined, in like manner, to form a General Association of the Phrenologists of Great Britain and Ireland, to be holden at the same places as, and immediately after, the British Association. For this purpose a circular has been forwarded to the Phrenological Society of Edinburgh, to state the views proposed, and to obtain their sanction and co-operation. On this occasion, the learned editor observes:—

"Phrenology, though a new science, has made extraordinary progress. In spite of all opposition, and though perhaps peculiarly obnoxious to ridicule, its truths have sunk deeply into the public mind; its principles are widely diffused—almost instinctively adopted: and its phraseology is widely employed, as if by common consent. How could it be otherwise? Phrenology is the true philosophy of mind; it satisfactorily explains the phenomena, which no other system proposed ever did; it unites into one, and for the first time, the philosophy and physiology of man. Though young in years, it has had rapid growth, and seems as if already far advanced towards maturity. * *

"The British Association is devoted exclusively to the advancement of one section of science. It has adopted the philosophy of matter. We ask, is less importance to be attached to the philosophy of mind? Are mental and moral philosophy to be neglected, because natural philosophy is to be promoted? Certainly not. That department is ours—we wish to pursue it definitely, but separated. The British Association has its object, and we have ours—distinct certainly, but not thence necessarily hostile."

There is no inconsiderable talent exhibited in most of the papers which this number contains; and we have no doubt its merits have, or *ought* to have, obtained for it a large circulation.

The Irish Farmer's and Gardener's Magazine. William Curry, jun. & Co., Dublin; Simpkin & Co., London.

THIS truly useful "*Register of Rural Affairs*," is rapidly and de-

servedly winning its way into public favour. The twenty-fifth number, amongst other valuable articles, contains "A comparative view of Oxen and Horses for the purposes of Husbandry," in which the superiority of the former is made clearly manifest. Mr. Niven, in a letter to the Editor, alludes to the cultivation of the new Italian Rye grass (*Lolium Italicum*), which he considers a most valuable addition to our cultivated grasses, in the following terms :—

"On the 9th of April, we had a small portion of the seeds of this grass sown alongside of the common rye grass, or *Lolium perenne*, and others; the soil being of a light gravelly quality, rather poor; its progress, notwithstanding, was quite astonishing, and in the short space of about two months, completely outstripped the others, both in luxuriance and richness of verdure. Being desirous to save the seeds, we let it remain uncut for about three weeks after the common rye grass; scarcely five weeks has elapsed since the cutting took place, and there are specimens now lying before me of the *after grass* upwards of *eighteen inches* in length. I can truly testify that this invaluable grass has fully supported the high character I received of it when in Scotland, last autumn.

"The following description of the *Lolium Italicum* may not be without use to those who are not acquainted with the species. Corolla considerably awned; spikelets much longer than the calyx; flowers lance-shaped; root fibrous; stems, several from two to three feet high, round, rough at the upper part, with tumid joints; leaves numerous, linear, flat, lively green, straited. Altogether a very different looking plant from the common rye grass, or *Lolium perenne*."

The following interesting observations "On the formation of a Geological Arrangement of the Rocky Strata of Ireland, with the Plants indigenous to the same," are from the pen of the same talented botanist, Mr. Niven; and as the valuable hint thrown out is alike applicable to all districts, we make the subjoined extract from the communication :—

"In the midst of the researches of scientific men, it must, doubtless, ever be the matter of greatest importance, to make their discoveries tell upon the community at large, by some *practical* results, some interesting and useful *exhibitions* of the theories advanced; or by some tangible proofs of their importance and value.

"With these impressions on the mind, I proceed shortly to shew how practically useful and interesting the study of geology might be made to the public at large, if some such arrangement were instituted as the following :

"Let us take, for instance, an appropriate piece of ground suited for the exhibition of *rocky strata*, by its inequalities, elevation, &c.; in such a place (situated, we shall suppose, in a national garden), specimens might be constructed of the respective formations of many of the most geologically interesting localities of the country; exhibiting the primitive, transition, secondary, alluvial, and volcanic formations respectively, with the plants indigenous to each; the whole to be described by proper *labels*, on which the *scientific name* of the rock or strata should be noted, with any other information of an interesting nature that might be comprehended in a small space.

"Specimens of the various genus and species of soils, arising from the decomposition and mixture of the several rocks, &c., might form another feature highly useful in such an arrangement, especially to the agriculturist. Thus bringing geology to bear, by positive and easy demonstration, on the kindred sciences of agriculture, horticulture, and botany.

"To accomplish such a desirable object, not only would the assistance and co-operation of scientific gentlemen be requisite, but, also, *time* and some *perseverance*. However, by the combined exercise of these *essential principles of action*, I have no doubt, if a beginning were once made, much, in a very short time, might be accomplished."

The Naturalist's Library.—Ornithology. Vol. V. *Pigeon Family.* Thirty-two plates, engraved on steel, by Lizars; with a portrait and biographical sketch of Pliny. By P. J. Selby.

Five volumes of the ornithological portion of *The Naturalist's Library* have already appeared. The first two are devoted to the Colibree family, (*Colubridæ*), the third to the Pavo family, (*Pavonidæ*), the fourth to the Grouse family, (*Tetraonidæ*), and the fifth, now under consideration, to the Pigeon family, (*Columbidæ*). It is in every way superior to its predecessors. The portrait, we like better than those prefixed to the former volumes, and the vignette (a pair of Ring Pigeons) is tastefully conceived and beautifully executed. The plates, likewise, completely eclipse those of the preceding volumes, whether we regard the position of the birds, the elegance of outline, or the delicacy of feathering. To support our assertion, we may specify the Green Tinilope (*Plinilopus purpuratus*), and the Purple Fancrest, (*Lophyrus cæruleus*)—the latter a splendid figure. In these plates, however, we miss one auxiliary, which added greatly to the beauty of the former volumes—we allude to the landscapes, which were lightly and very tastefully indicated: and at the same time served to take away from that appearance of coldness produced by the bright colours standing out from the white paper: as a striking example of this, we may refer to Mudie's *Feathered Tribes*, where the plates, although some of them are very fairly executed, have a wretched effect, for want of relief. The letter-press of the present volume greatly exceeds, in interest, that of the preceding, and the histories of the Ring Pigeon, the Wood Pigeon, and the Rock Pigeon, are in Selby's best style. We are happy to see that the English nomenclature has received some attention in the present volume, and hope it will be attended to in the two volumes of *British Ornithology* announced for publication.

The Earth; its Physical Condition, and most remarkable Phenomena. By W. Mullinger Higgins, F. G. S. London: Orr & Smith. 1835.

AMONG the innumerable host of books which yearly issue from the untiring press, in this bibliomaniac æra, there are none which we behold with so much pleasure as scientific and practical works. However bitterly our critical acumen might be poured forth against the productions of "wild distempered brains," we receive the smallest tribute to science with pleasure and respect. Science is the palladium of national safety; for every discovery is a security against decay. It is this revelation of powers applicable to our common

necessities, which essentially distinguishes the present age from any antecedent period in the history of nations; and where there is no ascertainable limitation to these powers, that safety may be perpetual. The promulgation, therefore, of scientific knowledge, by whatever means, is to be advised and encouraged; thus, "popular elementary works" are highly beneficial, inasmuch as a more general attention to science is created, when more abstruse productions would be rejected in despair. Among the numerous elementary treatises of the present year, Mr. Higgins's elegant little volume, though last, is not least in merit. The Author does not profess to astonish by the novelty of the matter; but it is something to attract the attention, as much by the value of the material as, also, by the perspicuous and pleasing mode of communication. The work includes an examination into the principal phenomena of the earth, with their various experimental inductions. The pictorial illustrations are neatly executed, especially the sketches in the classification of clouds; as the Cirrus, Cumulus, Stratus, Cirro-Cumulus, Cirro-Stratus, Cumulo-Stratus, and Nimbus: the commonest observer will acknowledge the correct delineation of these clouds. If there be any fault in Mr. Higgins's work, it is in the poetical exactions: science is a very plain unsophisticated person, who seeks no decoration from the Muses. That there is "poetry in nature to stir the soul to extacy" may be very true, but it should be left to the "casual observer," and not to the "minister and interpreter, of nature." Physics, or the doctrine of practical utilities, require merely perspicuity of style; nor can the ornaments of rhetoric lend any importance in the enunciation of facts. Mr. Higgins seems to be a "poetic philosopher;" and though we would not imply any derogation of his knowledge, we affirm it, as a truism, that philosophy and poetry repel each other. We exceedingly regret our want of room disables us from exhibiting many specimens from this interesting volume; but we cannot refrain from extracting the following account of that singular electric phenomenon, called St. Elmo's Light, which is pleasingly described:—

"St. Elmo's light is a luminous meteor, that frequently settles upon the mast-head of vessels, and is probably of electric origin, though it is never known to produce any of those disastrous effects which so often attend lightning. Sometimes it is confined to the mast-head, while at other times it gradually descends the mast to the deck itself. It was formerly supposed, by mariners, to be a visible representation of a spirit they call St. Elmo, who is the tutelary deity of those who traverse the mighty deep, and has a prophetic power. When it is confined to the topmast, it is a proof, in their opinion, that although bad weather may be present, yet it will not continue, and cannot injure the vessel. But when it descends the mast, it prognosticates a gale of wind, or a disaster, which will be more or less violent in proportion to the depth of its descent. Falconer has described this phenomenon in his *Shipwreck*:—

' High on the mast, with pale and livid rays,
Amid the gloom portentous meteors blaze.'

This appearance may be readily explained upon the known aptitude of a pointed conductor in transferring electricity from a highly electrical atmos-

phere ; and it is possible that it may, on philosophical principles, be considered as a prognosticator of atmospheric changes, since the agent itself has an evident connection with many meteorological effects, which we at present find some difficulty in explaining.

We take our farewell of Mr. Higgins, earnestly recommending his book to the perusal of our readers ; nor will the ladies refuse so grave a subject as philosophy a place in their boudoirs, when it is so elegantly arrayed.

A Manual of Entomology, from the German of Dr. H. Burmeister, by W. E. Shuckard, M. E. S. London : Edward Churton.

The publication of this admirable work is now drawing to a close, and we would strongly advise every one who takes a delight in the pursuit of this branch of Natural History, to procure a copy. The mechanism by which atmospheric air is admitted to the internal organs of respiration, is described in so clear and skilful a manner as to be highly interesting, not only to the professed entomologist, but to the most casual observer of nature. From the experiments of Sorg, Hausmann, and others, upon the decomposition of air during the respiration of insects, it is ascertained that "all breathing insects deprive the air of a considerable portion of its oxygen, and give off, in lieu of it, carbonic acid ;" the quantity of oxygen withdrawn by breathing, and the quantity of carbonic acid given off, varying according to the size of the creature, and the intensity of its respiration. The chapters on "The metamorphosis—muscular motion—the emission of sound—instinct—and self-preservation of insects," are replete with valuable information, and cannot fail exciting the most lively interest in the mind of every physiological student.

A Practical Treatise on the Diseases of the Teeth, in which the origin and nature of Decay are explained, and the means of Prevention pointed out. By W. Robertson. London : Longman & Co. 1835. pp. 158.

THE chief object of the author in presenting the present volume to the public, is, to make non-professional readers acquainted with the nature and progress of caries, or decay of the teeth, by placing before them new views of the origin of the disease, different, and, indeed, altogether opposed, to the commonly-received opinions on the subject. Mr. Robertson founds his new theory of caries upon the peculiarities of the different classes of the teeth, upon the individual anatomical structure of particular teeth, and, also, upon the organization of the enamel and proper bone of the tooth, which, not being strictly analogous in its structure to the other parts of the osseous system, does not bear a perfect resemblance to them in its diseases. Objecting to the theories of Bell and Fox, as insufficient to explain the cause of caries, Mr. Robertson advances the opinion

that this disease is the result of the chemical action of particles of decomposed food which are retained in the intervals, or indentations, of the teeth ; and this he supports by reference to the individual peculiarities in the structure of certain teeth, and the order in which the different classes decay singly or in pairs.

From Mr. Robertson's view of the anatomical structure of the teeth, and from the circumstance that caries is never found to commence upon a plain and smooth surface of a tooth, but always in these indentures or interstices, it is evident that the predisposition to decay is to be found in the organization of the part in which it occurs, and that it is totally independent of general causes affecting the constitution, and of inflammatory action, as hitherto supposed. After having explained the origin of caries, Mr. Robertson proceeds to notice the progress of the disease through its different stages, from the first commencement of the destruction of the enamel, by the decomposed and corroding food, to the period when the bone breaks in, the cavity of the tooth becomes exposed, and tooth-ache produced.

Having noticed the predisposing causes of caries, Mr. Robertson proceeds to lay down some practical rules for obviating them, and gives directions for the management of the teeth, as regards their predisposition to disease, both in the temporary and permanent state.

The theory proposed by Mr. Robertson is of great importance, if we view it in connexion with the vast extent of that class of diseases whose nature it proposes to explain. The work, as we have said, is principally intended for the general reader ; and we cordially recommend its perusal to all who wish to preserve themselves or their children from the painful and disfiguring effects of decay of the teeth ; whether these are considered in relation to the disease itself, or the operation necessary for its cure.

A Treatise on the Diseases of the Eye and its appendages, by Richard Middlemore, M. R. C. S. London: Longman & Co. 1835. pp. 1644.

THE late period of the month this publication came under our notice, renders it impossible to present our readers with even a brief analysis of this elaborate and comprehensive work. The numerous cases of diseases of the eye, in their various forms, which annually pass under the observation of Mr. Middlemore, in his capacity of Surgeon to the Birmingham Eye Infirmary, has rendered him eminently qualified to fulfil the arduous task he has undertaken. The result of his experience is given in a very clear and effective style ; and the methodical arrangement of the work, to which a copious index is affixed, will greatly assist the researches of the student. We propose again referring to this publication in a subsequent number.

A History of British Fishes, by William Yarrell, F. L. S. Parts 8, 9, and 10. London: John Van Voorst, Paternoster-row. 1835.

This very neat and extremely valuable publication merits every eulogium. Whether as regards beauty and correctness of printing, its admirable wood-cuts, or its judicious and well-written matter, we are convinced that it will challenge comparison with any monthly periodical whatsoever. Old Walton himself might have derived information from its pages; and as it abounds in anecdote, it will be found amusing even to such as are not attached to piscatory subjects. We pronounce this to be the most complete work of the kind, in every particular, with which we are acquainted. We had marked some interesting extracts, descriptive of the ascent of the Salmon up the rivers beyond the influence of the tide, preparatory to depositing their spawn, but which we are compelled reluctantly to omit.

The Gardener's Magazine. The Magazine of Natural History. The Architectural Magazine. Arboretum Britannicum. Numbers for October, November, and December. London: Longman & Co. 1835.

THESE periodicals maintain their high ground, and are admirably adapted to elucidate the several subjects on which they so pertinently treat. Mr. Loudon's indefatigability never tires, and he is equally graphic in his information, whether he speaks of trees, of natural history, or of architecture. In these numbers are some very interesting articles, but we are so pressed for room that we are only now enabled to mention two papers in *The Gardener's Magazine*, furnished by Mr. Richard Varden, architect and landscape gardener, of the city of Worcester, "On the simple and expeditious modes of ascertaining the heights of Trees," and "A Plan for laying out the Grounds of a Suburban Villa."

Mr. Varden, whose ingenuity is well worthy of commendation, has invented a small instrument for ascertaining the height of trees, which can be effected thereby with greater ease and expedition than by measuring with rods. This instrument is a modification of a quadrant or sextant, and it is graduated on a particular principle. As it requires, however, an engraving to enable our readers to form an exact idea of the invention, we must content ourselves, at present, with referring to the work.

London Catalogue of Books. London, Robert Bent. 1835.

THIS useful work of reference contains a list of upwards of 22,000 books, published from 1814, to December, 1834, classed under the following heads:—Miscellaneous Literature, Divinity and Ecclesiastical History, Law and Jurisprudence, Medicine, Surgery, Physiology and Chemistry, Hebrew, Arabic, Greek, Latin, &c.—The price, size, and name of the publisher are appended. It is needless to point out the utility of a work so indispensably necessary in the formation of a library.

FINE ARTS.

Lewis's Sketches and Drawings of the Alhambra, made during a Residence in Granada, in 1833—4. Drawn on Stone by Harding, Lane, &c. London: Hodgson, Boys, and Graves—Birmingham: Everitt.

FROM our knowledge of Mr. Lewis's high rank as an artist, and the great admiration in which we hold many former efforts of his pencil, we certainly anticipated a far richer treat in his *Alhambra Sketches*, than the gigantic and costly volume on our table, is capable of affording. The style in which the drawings are made, is more suited to the cold and sterile climes of Siberia or Muscovy, than the luxuriant, genial, and sunny south. The landscapes are, generally, little more than outlines, with large *touches*, we would rather say *dabs*, of white paint, giving one the idea that there had been a partial fall of snow, instead of sunlight, on the house-tops and towers. Many of the views are admirably chosen, and with somewhat more of elaboration in the drawings, and effect in the plates, would form very interesting representations of their grand originals; but the *Alhambra*, even in these its days of humiliation and decay, can have nothing of the *meagre* about it, and consequently, is not satisfactorily delineated in these slight sketches.

Another point we think might have been greatly amended by adding a brief description of the drawings, which can now only be well understood by those who are perfectly conversant with Washington Irving's delightful *Chronicles of the Alhambra*, to which work, Mr. Lewis's volume forms a very pleasant illustration; and had we hitherto held the artist in less high esteem, we should doubtless award to it a greater meed of praise; but we know his capabilities, and feel assured (with Goldsmith's critic,) that "the pictures would have been better, if the painter had taken more pains."

The first, "View of the Alhambra from the Albaycin," and last plate, "The Alhambra from the Darro," are two fine and spirited sketches of the exterior. The former shows the hill of the Alhambra rising over the city of Granada, with its "tiara of proud towers," above which the snowy range of the Sierra Nevada is seen in the distance: but the sunshine in the foreground and the white-topped mountains being described by the same black sketching and white spots of paint, the scene has nothing of the Spanish climate. The "Puerta Justicia," or Gate of Justice, is a bold and masterly sketch, animated by some cleverly drawn and characteristic figures, and showing a beautiful glimpse of distant scenery. The following plate, of a fine old Moorish arch, called "the Gate of the Vine," shows more than any other, the bad effect of the style of engraving adopted,—it is an admirable representation of a deep snow.

"View of the Sierra Nevada, and part of the Alhambra from January, 1836.—VOL. III., NO. XIV.

the Adarves," with a peasant stretched in the shade of an overhanging vine, has infinitely more of the character of southern scenery than the former plates; but when we call to remembrance Lewis's *pictures* of vintage-groups and pilgrims, and bring before our memory's eyes the rich and glowing effect diffused over them, we cannot but compare those former favourites, with the present productions of the same pencil, and lament that it should seem to have so lost its cunning.

The "Court of Myrtles," with its graceful and lofty colonnades of slender pillars, again surmounted by open galleries, surrounding the marble basin or fish-pond in the centre of the court, tells many a story of by-gone beauty and romance to the lovers of Moorish lay and legend; but the figures with which Mr. Lewis has peopled these scenes of faded grandeur and departed glory, are not of the kind to please the poetic or legendary gazer. He only gives us a few bandit-like peasants, with their dark-haired wives or loves spinning beside them; or a water-carrier, or comely old Padre, strolling amid the cool arcades and citron-groves of the Hill of Palaces: and these are not the beings we meet in Moorish chronicles. To the advocates of matter-of-fact *realities*, these sketches, showing all the desolation, and we might add *desecration*, of the Alhambra as it is, will be valuable for their fidelity of outline. To the more imaginative, (among whom we beg to class ourself), they serve as memorandums of localities. When we look over, or think over, the histories of gay and gallant beings, once the worthy and fitting denizens of such glorious places; these faint resemblances will serve as guides, in giving to the "airy nothings" of the legendary tale "a local habitation and a name." They are *maps* of the Alhambra, rather than pictures; and to those who have the happy faculty of supplying from the mind's rich storehouse all "appliances and means to boot," to fill up, in imagination, the incomplete production of the Painter, they would be all we require, (were the execution equal to the design). To those *unpoetic* persons who must needs see every thing laid down in distinct lines,—who cannot, in fancy, transform a water-carrier of Granada into one of the noble Abencerrages, or a Spanish belle, with her fan and mantilla, into a jewelled sultana of peerless beauty,—for such Mr. Lewis is a most unfit illustrator of this maze of enchanted palaces, haunted halls, and fairy bowers.

But to proceed with our "comments and reviews." The two following plates are both taken in the "Court of Myrtles," and give views of the Palace of Charles V., and the Tower of Comares. The arabesque ornaments on the arcades and walls of this court are extremely rich, and for the most part in good preservation. Mr. Lewis would have done well to attend more to the architectural peculiarities of the Moorish style; his arches are rarely drawn with accuracy. In the next plate, "Entrance to the Hall of Ambassadors," the beautiful door-way, with its elegant pendant ornaments like mimic stalactites, is greatly distorted from its "fair proportions." Here our *fanciful* friends will readily imagine, in

place of the Paysanne and her distaff, a fair Zelinda and her lute ; and, by the same process, the stalwart personage, standing, love-struck, in fringed gaiters and conical hat, with a fowling-piece over his shoulder, may be transmuted to an Abdallah or other chivalric hero of the "oldenne tyme," with folded turban, and jewelled scimitar, and robes of regal splendour.

"The Tower of Comares" forms the subject of the twelfth plate, and is, by far, the finest in the volume. The point of view is at considerably more than half the height of the tower ; which lifts its hoary and time-rifted battlements in lofty and massive grandeur before you. On the left is an arcade-gallery of the light Moorish arches, on their slender pillars, seeming as if hung in air : and to the right, at a dizzy depth below, lies Granada, on which you look down over the wood-girt hills of the once impregnable palace-fortress ; and bounding the view are the distant and dimly-seen mountain-tops of the Sierra Nevada. *This* is a splendid drawing.

The "Entrance to the Banos" is not so remarkable for beauty, as for profuse and indiscriminate decoration. The "Sala de las dos Hermanos," or Hall of the Two Sisters, is equally rich in embellishment, and the lofty archways, leading into, and through, the open court, give an extremely grand, yet light, appearance to this beautiful apartment. In the following plate we have the entrance to it, from the Court of Lions ; and a most graceful and stately effect do the slender columns and wide-springing arches give to portions of the building, where the redundancy of arabesques and carvings would otherwise appear extravagant, and even cumbrous.

And now a maze of columns, and capitals, and arches, and arabesques, bursts on the eye—it is the "Patio de los Leones," the Court of the Lions ; a very clever and masterly drawing, but requiring an attentive perusal, before the reader can quite comprehend it. From one side of the Lion Court is the entrance to the Hall of the Abencerrages, which is spiritedly sketched in the next plate, with a very fine perspective view of the colonnade : and, in the following one, the Hall itself appears, with its marble fountain, once crimson with the life-blood of Granada's best and noblest—the brave Abencerrages—now nearly empty, a guitar resting against it, and the fair owner calmly sitting at work beside. This is *not* the way to people Sketches of the Alhambra. Either it should be invested with all of glory and romance that has been ever said or sung ; or given to us in its desolation and decay. Glorious even then, if not disenchanted by the presence of things and persons, which destroy every illusion of fancy, and thrust away the very memory of the past. In looking at the really fine plate before us, we lay our hand over the lady and her knitting, and *then* we can call up visions fitting to the place.

The next plate gives a view of the celebrated Fountain of Lions, taken from the Hall of the Abencerrages, and with its rich carving and the long vista of arches seen across the court, would make it a fine picture, did not the *white* touches, so frequently mentioned, destroy much of the effect, by bringing the buildings, seen at a

considerable distance, nearer to the eye, than those in which the spectator is supposed to stand. Another and more general view of the Patio de los Leones, is in fine perspective, and conveys a very accurate idea of this splendid court.

"The Palace of the Generalife, from the Casa de Chapi," is a very delightful peep of a castle-crowned mountain, through a very beautifully-embellished window, at which Mr. Lewis's fair companion has fallen asleep, with her inseparable appendages, the guitar and work-basket, resting behind her. "The Torre de las Infantas," a magnificent apartment, or rather suite of apartments, with galleries, pendant roof, and covered with ornament, is tenanted by an old basket-maker, who sits in the foreground of the picture, with his dog beside him. Around the walls hang divers symptoms of such bodily occupants, in the shape of hams, meat, &c. One would almost expect to hear the walls quote Shakspeare, and exclaim "To this complexion must we come at last!" The light in this drawing is well managed, and the distances not too near.

"The Alhambra, from the Alameda del Darro," we mentioned at the commencement of our notice, and with that the volume ends. If our censure appear harsh to any, we beg them to understand it is the high esteem in which we hold Mr. Lewis's productions generally, which has induced us regretfully to comment upon what seems to us a falling-off, both in the feeling and execution of his works.

Roscoe's Wanderings through North Wales. Parts 7, 8, 9. Tilt, London; Wrightson and Webb, Birmingham.

WE have heartily to thank the intelligent "wanderer" for leading us, by his eloquent descriptions, again through many a well-known, and beautiful, and beloved scene, fraught with the characteristic grandeur and romance of our ancestral country. Right gladly do we hail his periodical challenge to a ramble among our old mountain-friends; and while our own hands are holding the after-records of his journeyings, by our "ain fireside," our spirits are with him on the crest of Snowdon, or in the lonely and ruined Tower of Dolbadern; we gaze with him on the now mouldering, once mighty, fortress of Dinas Bran, and all its by-gone glories seem to invest the hoary pile; we hear, in fancy, the Poet-Lover's harp, beneath the lofty bower of his high-born ladye, and were almost expecting a glance of her graceful form, when some rude interruption suddenly aroused us from our imaginary wanderings, and we turned to the exquisite *portraits* of our ancient friends which this elegant work presents to us.

The two views of Caernarvon Castle are admirably chosen, and contrast well the present and the past. The one by Cox, showing the many-towered pile standing out in strong relief against the bright-sunset sky, is peopled with beings of the present days of reality and labour: a rail-road for the conveyance of slate to the vessels moored by the quay, carts and waggons passing to and

fro, and numerous figures all busily employed, render it a faithful transcript of Caernarvon as it *is*. In Cattermole's grand and romantic picture, the moon is partially tinging the towers and battlements of the Castle, and gleaming on the steel morions, glittering spears, and heavy armour, of the warrior train entering the gateway, with their rich banners unfurled, and trumpets sounding shrilly in the quiet night, as the stone steps of the bridge ring with the tread of the mail-clad host. It is a glorious imagining of the by-gone time.

"The Trifaen Mountain," and "Llanilltyd," are very accurate and good pictures. "St. Asaph" is a pretty landscape, of the Creswick school; but the artist (Mr. Wrightson) would do well, when he finds so many jackdaws spotting the view, like a lady's sprigged gown, to thin their ranks somewhat, if not *murderously*, at any rate *artistically*. "Penrhyn Castle," by Cox, is a most lovely scene of wood, vale, and mountain, crowned with the lofty trees of the modern-antique castle, and giving us a refreshing peep of the opposite shore of Anglesey, and the intervening Menai Strait, all basking in the quiet sunniness of a summer's day. "Conway," by Cox, is a distant view of the Castle, but a very effective one, with one of the strong, tower-flanked gateways of the town-wall in the foreground. These remains of the ancient fortifications, once so jealously guarded with gates and portcullises, now form merely picturesque entrances to the town; and greatly do they increase its romantic beauty, as the spirited plate before us bears ample testimony. Of the wild rocky pass of "Nant Frangon," we have a fine effective view, by the same talented artist. The detachment of foot-soldiers winding along the Simplon-like road, adds greatly to its *living* and picturesque appearance. The distant mountains, the torrent springing down their rocky sides, and the cattle browsing in the valley, make altogether a very lovely picture of true Welsh scenery. In the three numbers, now before us, of these pleasant wanderings, we meet but one of Creswick's delightful landscapes; it is his view of "Bettws y Coed:" we look, and might almost *walk*, down the village-street, and, passing the stage-coach now stopping at the inn-door, wend onwards a long ramble among those grand heaven-pointing mountain-ranges, piled, crag above crag, into the very clouds, and receiving, at the same time, sunlight and showers. There is a most happy feeling pervading all Creswick's landscapes; they are all *nature*, but nature in her happiest moods and expressions: he paints her often like a young beauty, with the tears glistening in her eyes, yet radiant with a sudden smile of triumphant joy. Here, the passing shower has just swept over the village, and every tree is sparkling in the gleamy sunlight poured on its dropping leaves. Nor is this effect in any degree diminished by the engraver, who has "done his spiriting" most gently, and succeeded in retaining in this, as in most of the other plates, the grace and individuality of the master. It is, indeed, evident that all the talent engaged on this admirable work, is of a very high order.

SCIENTIFIC MISCELLANEA.

LIGHT PRODUCED BY FRICTION AND CRYSTALLIZATION.—The light emitted during the attrition of some substances, such as quartz, has been attributed to the intense heat which is produced by the friction; a temperature sufficient, as is well known, to actually fuse the abraded particles. But how are we to account for the luminous appearance of loaf sugar, or of tartaric acid, when broken—is the light electrical? We can scarcely suppose it to be so, when *wet* crystals of sulphate of potash are rendered luminous by being shaken in a phial. Light is, also, emitted during the spontaneous fracture of crystals in the act of crystallizing. If three or four gallons of a hot solution of sulphate of soda be decomposed by carbonate of potash, and the whole set aside in a dark place, during the crystallization of the sulphate of potash, on the surface of the liquor the scintillations are so brilliant as to resemble particles of gunpowder, ignited by being thinly scattered upon a surface of heated iron.

E. W. B.

FAMILY CONCERTS.—In most families in England where music is taught, it is the custom for every individual, male and female, to receive instructions on the piano, and each practises in separate rooms, or, at least, at different times. If, instead of this, one were to learn the harp, another the piano, a third the violin, and the rest the tenor, violincello, flute, &c., what delightful concerts might take place within the family circle, and far greater pleasure would fall to the share of both performers and listeners, from these domestic concerts, than where each takes his solitary practice, to the great annoyance, perhaps, of all the rest. There is, probably, nothing more prejudicial to the 'divine art' in England, than the prevailing custom of learning only the piano—and that but indifferently. If the organ and organ music had the attention paid to them which they deserve, great improvement might reasonably be expected.

COLOUR PRODUCED IN ORGANIC MATTER BY CHLORINE.—It is well known that chlorine destroys the colour of organic matter, but we were scarcely prepared to find that it develops colour in some white organic substances. The wings of the whole of the white indigenous Butterflies, comprehended in Stephens' genus *Pontia*, are rendered, by chlorine, of a beautiful deep pink colour. This effect is not produced by either muriatic or nitric acids, neither does the experiment succeed with any of the other white lepidopterous insects on which it has been tried. The colour developed on the wings of *P. rapæ*, or the *small white*, is deeper than upon those of the other species; and it is immaterial whether the insect has been lately captured, or has been an ancient inmate of the cabinet. The experiment is readily tried in the following manner:—Attach the insect to a piece of cork fixed on the inside of a tumbler, and invert the glass, for a minute or two, over a little

red lead, moistened with muriatic acid. The insect, unchanged in appearance, is then to be replaced in the drawer of the cabinet, and, in the course of a few hours, it changes to a beautiful pink. If the specimen be too long exposed to the action of the gas, the colour will not be developed; and the pink colour produced by one exposure, is entirely destroyed by a second.

E. W. B.

Herschel, who is now at the Cape of Good Hope, has turned his attention to meteorological subjects, and has moved "The African Literary and Philosophical Institution" to request the assistance of its correspondents, and of all who may have leisure and inclination for observations of the kind, in any part of the world, to make simultaneous registers of the barometer, thermometer, and other meteorological instruments, and of the winds and weather; likewise, the temperature of the earth at small depths, say ten or fifteen feet. He proposes, in addition to the daily register, that four days in each year should henceforth be especially set apart; and that the shewings of the different meteorological instruments should be registered every hour throughout the twenty-four successive hours of those stated days—viz., the 21st of March, the 21st of June, the 21st of September, and the 21st of December. The plan and modes of procedure are published in a small pamphlet of seventeen pages, which is printed for private distribution.

BICARBONATES OF SODA AND POTASH.—Rose has shewn that bicarbonate of soda, when in solution, is reduced, by removing the pressure of the atmosphere, to the state of sesquicarbonate; and that bicarbonate of potash, though not affected by exposure in a vacuum, in the crystalline state, is also, decomposed, if in solution.

CHLOROUS ACID.—It has been a subject of discussion among chemists whether bleaching powder consists of chloride of lime, or of a mixture of chlorite of lime with chloride of calcium. Balard, in an able paper, advocates the latter theory. He has not succeeded in procuring chlorous acid directly, from bleaching powder, but has isolated it, by pouring a mixture of red oxide of mercury with twelve times its weight of water, into vessels filled with chlorine: rapid absorption takes place. The fluid, separated by filtration and distilled in vacuo, furnishes weak chlorous acid, which proves to be constituted of two volumes of chlorine, and one volume of oxygen. He confirms the statement of M. Morin, that, by the decomposition of the bleaching chlorides, either by time or by heat, twelve atoms of oxygen are disengaged; whilst seventeen proportionals of the chloride of the metallic base, and one of the chlorate of the oxide remain.

PRODUCTS OBTAINED IN ORGANIC ANALYSIS.—Some of the foreign chemists, by treating the cyanurets with various agents, have obtained several singular compounds, differing widely in their appearance and properties. These, if the contrary were not previously known, might reasonably have been supposed to exist in the substance under examination. These facts

raise a doubt as to whether some of the substances obtained in organic analysis, are not formed during the processes employed in performing the analysis.

A Royal Society of Sciences has been established at Antwerp, and, though it has existed only six months, it already boasts of many eminent names of foreign literati among its members—such as Alex. von Humboldt, Charles Dupin, Dr. Pariset, Alexander de la Borde, De Candolle, Magendie, Hufeland, &c., &c.—*Foreign Quarterly Review*.

M. Azeglio, director of the Royal Gallery of Paintings at Turin, is publishing representations of the finest pictures in that collection, engraved by some of the most eminent Italian artists. The work will form eighty numbers, of four plates each, in folio. The illustrative text accompanying them, will be furnished by M. Azeglio himself.—*Ibid*.

THE ARTS AND ARTISTS IN FRANCE.—According to a French scientific publication, there are now in France 82 museums, 160 schools of the fine arts, 2,231 artists, whose names have been made eminent by their works. This number of artists consists of 1,096 painters, 150 sculptors, 113 engravers, 263 architects, and 309 draughtsmen. In Paris itself there are no less than 35 schools of the fine arts, 20 museums, 773 painters, 106 sculptors, 102 engravers, 195 architects, and 209 draughtsmen. Total, 1,385 artists.

LITERARY INTELLIGENCE.

SHORTLY will be published, "*The Romance of Flowers*." The work will consist of highly-finished coloured engravings, with poetical illustrations, and apposite extracts from the old poets. The drawings and original illustrations, by Louisa Anne Twamley, author of "*Sea-Side Thoughts*," and other poems.

A History of British Quadrupeds, by Thomas Bell, F. R. S., F. L. S., &c., uniform with "*Yarrell's British Fishes*," will shortly appear.

Mr. Thomas Turner, of Manchester, is preparing for publication, *Researches on the Organization, Functions, and Diseases of Membranous Secreting Textures*, with original plans, &c.

The first number of the *British and Foreign Medical Review* is announced for publication on the first of January, under the editorship of Dr. Forbes and Dr. Conolly, and to be continued quarterly.

A History of English Literature, critical and philosophical, by Mr. D'Israeli, is announced.

Shortly will be published, the *Literary Remains of Samuel Taylor Coleridge*, edited (with the permission of Mr. Coleridge's executor) by Mr. Henry Nelson Coleridge.

Observations on the Present State of the Deaf and Dumb in Great Britain, shewing the great increase of the calamity, and pointing out the most approved means for its removal, together with a new mode of education, by the Rev. W. Fletcher, F. R. A. S.

Dr. J. L. Bardsley, of Manchester, is preparing a second volume of his *Hospital Facts and Observations*.

LIST OF NEW PUBLICATIONS,

From September 8 to December 8, 1835.

- Agnes de Mansfeldt, by T. C. Grattan, 3 vol. post 8vo., 31s. 6d.
 Aristophanes, "The Wasps," with Notes, by T. Mitchell, 8vo., 10s.
 Asiatic Researches, (Index to first 18 vols.) royal 4to., 15s.
 Baxter's Agricultural and Horticultural Annual, 1836, 8vo., 12s. bound.
 Beechey's (H. W.) Literary Works of Sir Joshua Reynolds, 2 vol. fcap. 16s.
 Blakiston's (Capt.) Twenty Years in Retirement, 2 vol. 8vo., 24s.
 Bulwer's (E. L.) Rienzi, the Last of the Tribunes, 3 vol. post 8vo., 31s. 6d.
 Carey's (H. C.) Essay on the Rate of Wages, post 8vo., 8s.
 Channing's (Dr.) Works, 2 vol. fcap., 12s.
 Cloquet's (Dr.) Private Life of Lafayette, 8vo., 12s.
 Cock's (Edw.) Students' Guide for Dissecting, fcap., 7s.
 Cocks' Illustrations of Cooper's Surgical Dictionary, 2 vol. 8vo., 5l. 9s. 6d.
 Cole's (W.) Select Views in Greece, folio, 84s.
 Collins' (Rt.) Observations on Midwifery, 8vo., 12s. 6d.
 Comet (The), Illustrated and Explained, by J. Seares, 12mo., 4s.
 Conwell on the Liver, and on Hepatic Disease in India, 8vo., 14s.
 Cooper's (Sir A.) Principles and Practice of Surgery, 8vo., 18s.—col. 28s.
 Davy's (Edw.) Experimental Guide to Chemistry, 12mo., 3s. 6d.
 Dissertations on the History of Physical, &c. Sciences, 4to., 36s.
 Everard's (Ann) Flowers from Nature, imp. 4to., 31s. 6d.
 Family Library, Vol. LIV., (Washington's Life, Vol. II.), 18mo., 5s.
 Forget-Me-Not, for 1836, 18mo., 12s. bound.
 Friendship's Offering, for 1836, 18mo., 12s. bound.
 Gallery of Modern British Artists, 4to., 16s.
 Grahame's (Jas.) History of the U. S. of North America, 4 vol. 8vo., 2l. 10s.
 Hampden's (R. D.) Lectures on Moral Philosophy, 8vo., 8s.
 Hoblyn's (R. D.) Dictionary of Medical Terms, 12mo., 9s.
 Hogg's (Dr. Edw.) Visit to Alexandria, &c., 2 vol. post 8vo., 21s.
 Heath's Picturesque Annual, for 1836, 8vo., 21s.—lp. 50s.
 History of Fossil Fuel, the Collieries, &c., of Great Britain, 8vo., 12s.
 Introduction to the Study of Birds, 12mo., 10s.
 Irving's (W.) Legends of the Conquest of Spain, post 8vo., 9s. 6d.
 James's (G. P. R.) Educational Institutions of Germany, post 8vo., 7s. 6d.
 Jardine's Naturalist's Library, Vol. X.—British Butterflies, 12mo., 6s.
 Vol. XI. (Deer, Camels, &c.) 12mo., 6s.
 Jenyns' (L.) Manual of British Vertebrate Animals, 8vo., 13s.
 Johnson (G. W.) on the Arrangement, &c. of the Kitchen Garden, fcap. 3s. 6d.
 Landscape Annual, 1836, 8vo., 21s.—lp. 52s. 6d. morocco.
 Lardner's Cyclopædia, Vol. 71, (Literary and Scientific Men, vol. 2) 12mo. 6s.
 Vol. 72, (Swainson's Nat. Hist. of Quadrupeds),
 12mo., 6s.
 Vol. 73, (Rome, vol. 2) 6s.
 Latrobe's (C. J.) Rambler in America, 2 vol. sm. 8vo., 16s.
 Lebaudy's Anatomy of the Regions interested in Surgical Operations, royal
 4to., 24s.
 Lee (Edwin) on the Medical Practice of France, Italy, &c., 8vo., 8s.
 Lieber's (F.) Reminiscences of G. B. Niebuhr, post 8vo., 9s. 6d.
 Lindley's (John) Key to Structural, &c. Botany, 8vo., 4s. 6d.
 Loseley Manuscripts, edited by A. J. Kempe, 8vo., 21s.
 Mackintosh's (Sir J.) Discourse on the Study of the Law of Nature, &c.,
 12mo., 3s.

- Macrobin's (Dr. J.) Introduction to the Study of Practical Medicine, 8vo., 5s.
 Marshall's (Dr. J.) Observations on Diseases of the Heart, &c., 8vo., 6s. 6d.
 Mayo's Outlines of Human Pathology, Part I, 8vo., 8s.
 Middlemore's (Rd.) Treatise on Diseases of the Eye, &c., 2 vol. 8vo., 1l. 15s.
 Minerals and Metals; their Natural History, &c., 18mo., 2s. 6d.
 M'Nab's Compendium of the Ligaments, 12mo., 3s. 6d.
 Mudie's The Earth, The Heavens, The Air, royal 18mo. 5s. each.
 Osborne's (Dr.) Nature, &c. of Dropsies, 12mo., 5s.
 Pearson (Dr. R.) on Action of the Broom-seed in Dropsy, 8vo., 2s. 6d.
 Random Recollections of the House of Commons, post 8vo., 10s. 6d.
 Reid's (Dr. Jas.) Manual of Practical Midwifery, 24mo., 5s. 6d.
 Rice's (M.) Initiatory Step to English Composition, 12mo., 5s.
 Robinson's (H. B.) Memoirs of Lieut. Gen. Sir Thos. Picton, 2 vol. 8vo. 28s.
 Rules for Expanding and Diminishing Drawings, 4to., 8s. 6d.
 Schlegel's (F. Von) Philosophy of History, translated by Robertson, 2 vol. 8vo., 28s.
 Smith's (C. J.) Historical and Literary Curiosities, pt. 1, 4to., 7s. 6d.
 Spark's Library of American Biography, Vol. IV., 12mo., 7s.
 Stanley's (Rev. E.) Familiar History of Birds, 2 vols. fcap., 7s.
 Stilling's (Heinrich) Domestic Life, &c., Vol. 2, 12mo., 6s.
 Student's Cabinet Library; or, Useful Tracts, Vol. I., 12mo., 5s.
 Thomson's (Dr. T.) Outlines of Mineralogy, Geology, &c., 2 vols. 8vo., 32s.
 Thorburn's (J. S.) Elements of Bedside Medicine, &c., 8vo., 14s.
 Thorold's (Mrs. A.) Letters from Brussels, 1835, post 8vo., 10s. 6d.
 Tocqueville's Democracy in America, Vol. 2, 8vo., 12s.
 Todd's (Rev. J.) Student's Manual, 12mo., 6s.
 Transactions of the Geological Society, Vol. IV., Pt. I., 8vo., 14s.
 ———— Med. and Chir. Society of London, Vol. XIX., 8vo. 15s.
 Trollope's (Rev. W.) Analecta Theologica, Vol. II., 8vo., 17s.
 Venables' Interlinear Translation of Gregory's Conspetus, 12mo., 4s. 6d.
 Vow of the Peacock, and other Poems, by L. E. L., fcap., 10s. 6d.
 Wardrop (Dr. J.) on Blood-letting, post 8vo., 4s.
 Wilson's (Jas.) Treatise on Insects, 4to., 15s.
 Yate's (Rev. Wm.) Account of New Zealand, post 8vo., 10s. 6d.

METEOROLOGICAL REPORT.

ON THE AURORA BOREALIS.

ON the evening of the 17th of November, 1835, there was a very brilliant aurora; a broad sheet of white light, filling the northern part of the heavens, from West to North-east, and extending from 35 to 40 degrees towards the zenith. Occasionally dark clouds traversed this luminous sheet, but without appearing at all to influence, or to be influenced by, the belts or bands of light which every now and then extended, in a vertical direction, across it. These bands, or streamers, sometimes appeared in considerable numbers,—and at one period in particular, there were two considerable ones close together of a very remarkable brick-dust red colour; a strong light was thrown upon all objects around. These phenomena were observed from 9 to 11 p. m., and were still to be seen at 1 a. m. The day had been mild and pleasant,—light Westerly breezes, with large intervals of sun; the maximum of the thermometer, 50; Barometer, 29.310, *slowly* falling.

On the 18th, the wind was high and Westerly, with clouds and some sun in the morning, and occasional showers in the afternoon; the barometer

standing, at 9 a. m., 29.200, the thermometer reaching 52°. Towards evening the wind drew round to W. N. W. and N. W., the clouds cleared off, and at 11 p. m. the barometer had risen to 29.300. At 8 o'clock in the evening, the atmosphere was quite free from cloud, and from this period until half-past 10, there was the most brilliant display of Aurora I have ever witnessed, far surpassing that of the preceding evening. A beautiful and very luminous arch stretched from N. N. E. to West, at about 35 degrees from the horizon, sometimes quite complete, at others broken into detached luminous masses. This arch, at 9 p. m., passed through Lyra, its upper edge just touching the two principal stars in Ursa Minor, and thence extending through the Pointers in Ursa Major; long luminous streamers were shooting out from it at all points,—sometimes more brilliant in the West, at others in the North, and then in the N. E., varying every moment. At one period appearing, at various points between the concavity of the arch and the horizon, like the tail of an immense comet, at others darting out, in great numbers, from the convexity towards the zenith. Added to all these interesting appearances, were continual and extremely rapid flashes or undulations of light,—as if of broad, broken, horizontal bands of lambient flame—which swept, with the rapidity of lightning, from all the northern half of the horizon, to a point almost exactly over-head. These coruscations, or flashes, very frequently left permanent streaks of light exactly resembling strongly illuminated bands of delicate cirri. These luminous undulations, or flashes—always converging to a particular spot—formed, at times, a most beautiful wreathed crown, which would remain permanent over Gamma Andromeda. These luminous flashes stretched, at one period, far into the southern region of the heavens.

SEPTEMBER.

1835	Barometer.		Thermometer		Day.	Remarks.	
Sept.	Morn.	Even.	Max.	Min.		Night.	Wind.
1	29.510	29.590	68	52	Fine, cloudy, sun	Fine	S. E.
2	29.600	29.540	69	50.5	Very fine	Fine	Ditto
3	29.425	29.280	71	52	Very fine	Fine	Southerly
4	29.145	29.155	69.5	56	Cloudy, fine	Showers	Westerly
5	29.275		67	57	Fine, clouds, sun	Fine	North, light
6	29.465	29.410	69	54	Cloudy, hazy, rain p. m.	Fine	E. & S. high
7	29.415	29.305	68.5	56	Cloudy, fog, sun, fine	Fine	S. E.
8	29.085	29.005	60	56	Cloudy, rain	Fine	S. & S. W.
9	29.090	29.100	62	48	Fine, windy	Fine	N. W. fresh
10	28.670	28.660	59	48	Heavy rain, fine p. m.		W. & N. W.
11	28.820	28.940	57	47	Fine, cloudy, wind	Windy	N. W. high
12	28.665	28.800	58	48	Showers and dis. thun.	Rain	South, light
13	28.910	29.100	60	45	Clouds, shrs., fine p. m.	Showers	N. W.
14	29.150	29.165	65	50	Cloudy, sun, fine, shrs.		Westerly
15	29.110	29.085	63	58	Lt. rain, hvy. rain p. m.	Showers	S. W.
16	29.100	29.040	60	46	Clouds, sun, showers.	Fine	Ditto
17	29.045	29.110	60	47	Fine, sun, shrs. p. m.	Showers	South, light
18	29.100	28.830	57	45	Fog, Rain p. m.	Fine	Ditto, ditto
19	28.820	28.880	63	54	Fine, sun, shrs. p. m.	Much rain	S. W. strong
20	28.870	29.085	62		Heavy showers		S. W.
21	29.160	29.050	62	5	Cloudy, heavy showers	Fine	Calm
22	28.785	28.820	62	50.5	Clouds, heavy showers		S. W. high
23	28.880	29.115	61	51	Clouds, heavy showers	Fine	Ditto, ditto
24	29.165	29.315	60.5	50	Very fine, sun	Showers	Calm
25	29.315	29.100	58	43	Very fine, sun	Fine	S. W. light
26	28.950	29.020	61	50	Fine, sun, clouds	Rain	Calm, N. W.
27	28.930	28.730	59	45	Fine, rain p. m.		Northerly
28	28.750	28.815	51	40	Fine, sun, cold	Heavy rain	N. W.
29	28.805	28.805	61	48	Cloudy, fine	Fine	S. W. high
30	28.490	28.390	60	50.5	Cloudy, fine, rain p. m.	Rain	S. E.
Mean Max. 62.1.					50.0 Mean Min.		

OCTOBER.

1835	Barometer.		Thermometer.		Remarks.		
Oct.	Morn.	Even.	Max.	Min.	Day.	Night.	Wind.
1	28.430	28.350	58.5	45	Cloudy, rain at even.	Showers	S. W. high
2	28.500	28.685	59	50	Sun, clouds, showers	Cloudy	South light
3	28.700	28.705	56	42	Sun, clouds, showers	Fine, hvy. dew	Vble. light.
4	28.730	28.870	56	47.5	Cloudy, fine	Cloudy, fine	Light, north
5	29.005	29.180	59	45	Fine, sun, and clouds	Ditto	N. W. light.
6	29.240		58	47	Fine, clds., lightg. in ev.	Fine, lt. shrs.	Calm, south
7	29.410	29.420	50.5	47	Cloudy, damp	Fine, dew	Ditto north
8	29.320	29.006	56	45	Fine, cloudy	Fine, cloudy	Ditto vble.
9	28.770	29.250	51	47	Cloudy, sun, showers	Heavy rain	Northerly
10	28.325	29.670	49	43	Sun, showers	Ditto	Westerly
11	28.830	29.180	50	37	Clouds, shrs., fine, cold	Showers	Northerly
12	29.305	29.280	53	39	Clouds, fine	Cloudy	N. then S.
13	29.330	29.470	60	52	Cloudy	Showery	S. W. high
14	29.635	29.760	56	51	Cloudy, fog, lt. rain	Rain	Calm, N. W.
15	29.805	29.810	58	51	Cloudy	Showery	Ditto, North
16	29.805	29.725	58	51	Cloudy, fine	Cloudy	Light, vble.
17	29.700	29.685	55	50.5	Cloudy, fine		Ditto
18	29.690	29.700	53	48.5	Cloudy, fine	Cloudy	Calm
19	29.640	29.430	51	39.5	Fine, sun	Fine, hvy. dew	Ditto, south
20	29.275	29.170	49	39	Cloudy, lt. rain	Fine	South fresh
21	29.165	29.100	49	35.5	Clouds, sun, lt. shrs.	Fine, dew	Westerly
22	29.005	28.810	50	37	Cloudy, shower	Fine	S. W. light
23	29.018	28.810	51	38.5	Sun, fine, cloudy	Showers	S. W.
24	29.000	29.050	51	39.5	Sun, fine, showers	Hvy. showers	Ditto
25	29.025	28.290	52	39	Very heavy rain	Rain	Do. hgh. lat.
26	28.600	28.910	48	37.5	Cloudy, fine	Ditto, wind	South
27	29.100	29.305	48	38	Fine, showers	Fine	N. W. mod.
28	29.370	29.300	47.5	37	Fine, sun, clouds	Fine	Northerly
29	29.205	29.555	53	43	Fine, sun, clouds	Rain	W. S. W.
30	29.605	29.400	46	40.5	Cloudy, damp. rain evg.	Fine	Calm
31		29.515	47	43	Fog.	Rain	
Mean Max. 52.8			43.4 Mean. Min.				

NOVEMBER.

1835	Barometer.		Thermometer.		Remarks.		
Nov.	Morn.	Even.	Max.	Min.	Day.	Night.	Wind.
1	29.605	29.635	47.5	39	Fine, sun	Fine	Light, calm
2	29.600	29.420	46.5	35	Cloudy, rain even.	Ditto	Light, south
3	29.340	29.400	45	45	Continued rain	Rain	Ditto
4	29.400	29.345	39.5	39.5	Ditto		S. W.
5	29.335	29.300	40	36	Cloudy, rain	Showery	Light, south
6	29.290	29.405	42	38	Sun, clouds, rain	Fine	Vhle., calm
7	29.370	29.340	49	38	Cloudy, showers	Cloudy	Light, N. W.
8	29.410	29.480	47.5	39	Fine, sun, light clouds	Fine	Ditto, N.
9	29.575	29.680	40	38	Cloudy	Rain and sleet	N. & N. E.
10	29.770	29.825	38.5	32.5	Cloudy	Fine	Easterly
11	29.830	29.740	39.5	33	Cloudy, fine	Ditto	Light, N. E.
12	29.690	29.750	42.5	36.5	Cloudy, showers early	Ditto	Ditto North
13	29.805	29.715	41	35.5	Clouds, sun, haze	Ditto	Ditto
14	29.530	29.550	40	35	Cloudy, ltl. snow & rain	Ditto	Ditto
15	29.570	29.560	43	38	Sun, cloudy, haze	Cloudy	Northerly
16	29.440	29.415	45.5	38	Fine, sun, clouds	Ditto	Ditto
17	29.310	29.300	50	43	Fine, sun, clds., aurora.	Ditto	S. W., light
18	29.200	29.300	52	46	Clds., sun, wind, aurora	Fine	W. & N. W.
19	29.410	29.405	49	39	Fine, sun, and clouds	Ditto	Light, N. W.
20	29.350	29.215	49.5	42	Fine, Windy	Some showers	W. & S. W.
21	29.220	29.180	52.5	48.5	Fine, clouds, wind	Clouds	S. W. high
22	29.100	29.105	54	48	Cloudy, wind, showers	Showers	Ditto
23	29.145	29.150	53	45	Cloudy	Ditto	S. W.
24	29.120	29.075	52	44	Cloudy, fine, rain	Rain	Ditto, light
25	29.135	29.000	54	48.5	Fine, clouds, sun	Fine	South, light
26	28.970	28.650	54	50	Cloudy, rain	Cloudy	Ditto, fresh
27	28.705	28.645	53	48	Fine, clouds, rain	Showers	Ditto, light
28		29.050	48.5	45	Rain, fine		
29	28.965	28.750	49	42	Clouds, continued rain	Copious dew	S. W.
30	28.575		47		Heavy rain, fine	Fine	Ditto
Mean Max. 46.80.			41.0 Mean. Min.				

INDEX.

- Bishop Burnett's History of his own Time, Remarks upon, 1
 British Association, Meeting of the, 113
 Birds (The) of Britain, systematically arranged, 197
 Botany to Medicine, On the Importance of the Study of, 259
 Botanicæ, Notitiæ, 280
 Caterpillars, An Outline of British, 283
 Chemistry, Observations on, 248
 Climates of Great Malvern and London, A Comparison between the, 54
 Comets, On the Influence of, 218
 Correspondence, 288
 Critical Notices of New Publications:
 Boswell's Life of Samuel Johnson, 159. Loudon's Gardener's Magazine, 160. Britton's History and Antiquities of the Cathedral Church of Worcester, 161. Observations on certain Indentations in the Old Red Sandstone, by J. Allies, Esq., 167. De Lamartine's Souvenirs pendant un Voyage en Orient, 170. The Works of William Cowper, by Rev. T. Grimshawe, 171. Yarrell's History of British Fishes, 171, 336. Burmeister's Manual of Entomology, 172, 334. Elements of Bedside Medicine and General Pathology, by J. S. Thorburn, M. D. 317. The Air, The Earth, The Heavens, By R. Mudie, 324. Swainson on the Natural History and Classification of Quadrupeds, 327. The Phrenological Journal and Miscellany, No. 46., 330. The Irish Farmer's and Gardener's Magazine, 330.—The Naturalist's Library; Ornithology, 332. The Earth; its physical condition, and most remarkable Phenomena, by W. Mullinger Higgins, 332. A Practical Treatise on Diseases of the Teeth, by W. Robertson, 334. Middlemore's Treatise on Diseases of the Eye, 335. Loudon's Gardener's Magazine, and Magazine of Natural History and Architecture, and Arboretum Britannicum, 336. Bent's London Catalogue of Books, 336.
 Education, Remarks on the necessity of Improvement in, 253.
 Frontal Sinuses, Aphorisms on the, 43
 Fine Arts: Birmingham Society of Arts; modern Exhibition, 100.—Roscoe's Wanderings through North Wales, 169, 340. Lewis's Sketches and Drawings of the Alhambra, 337.
 Halley's Comet, Hints to Observers of, 134
 Ichthyolites, Professor Agassiz on, 132
 Imagination, On the effects of certain Mental and Bodily States upon the, 177
 Latin, On the Study of, more particularly as regards the Medical Profession, 46
 Literary Intelligence, 173, 344
 Meteorological Report, 175, 346
 Non-Permeability of Glass by Water, On the, 72
 New Publications, List of, 173, 345
 Ornithological Nomenclature, Remarks conducive to the Improvement of, 26

Ornithology, A Retrospect of the Literature of British, 78
Ornithology, Sketches of European, 265

Painting and Sculpture, Cursory observation on certain inconsiderate criticisms respecting, 230

Poetry : The Sinner's Agony, 35.—Sonnet, 53, 77

Proceedings of Provincial Societies : Meeting of the Provincial Medical and Surgical Association, 138. Birmingham School of Medicine, 142, 300. Birmingham Philosophical Institution, 146, 301 ; Analysis of Mr. Taylor's lectures on the "Early English Opera," 303. Birmingham Mechanics' Institution, 149, 307. Liverpool Medical

Society, 309. Liverpool Literary, Scientific, and Commercial Institution, 150, 310. Manchester Mechanics' Institution, 152. The Mechanics' New Institution, Manchester, 155. Worcestershire Natural History, 156. Shropshire and North Wales Natural History Society, 157, 293. Worcester Literary and Scientific Institution, 312 ; lecture on the Nervous System of Man and Animals, by E. A. Turley, Esq.

River Huallaga, Remarks on the practicability of Navigating the, 36.

Scientific Miscellanea, 342

ERRATA.—Page 133, line 30, insert, after Professor Agassiz, "has been derived." Page 200, line 10, for *Nictea cinerea* (*Steph.*), read *Surnia cinerea*, (*Dum.*) Page 200, line 14, for Tawny Surn, *Surnia stridula*, (*Steph.*), read Tawny Aluc, *Aluco stridua*, (*W.*) Page 202, line 23, for *Silvia hippolais*, (*Lath.*), read *Silvia loquax*, (*Herb.*)

END OF THE THIRD VOLUME.

25 NOV. 1916



BARLOW, PRINTER, BENNETT'S-HILL, BIRMINGHAM.

THE BEST LIFE OF NAPOLEON.

Now publishing, in Weekly Parts, Price One Shilling, to be completed in Twenty-four Parts,

BOURRIENNE'S

MEMOIRS OF THE EMPEROR NAPOLEON,

TO WHICH ARE NOW ADDED,

ANECDOTES AND ILLUSTRATIVE NOTES.

R. Bentley, New Burlington-street ; J. C. Barlow, Birmingham.

NEW WORKS BY ROBERT MUDIE,

AUTHOR OF "FEATHERED TRIBES," "NATURAL HISTORY OF BIRDS," ETC.

THE AIR :

A popular Account of the Atmospheric Fluid, in its composition, action, phenomena, and uses in the economy of Nature.

With beautiful frontispiece and vignette printed in oil colours.

Royal 18mo. Price 5s., cloth boards.

Uniform with the above, with frontispiece, &c., 5s. each,

THE HEAVENS :

A POPULAR VIEW OF THE CELESTIAL BODIES.

THE EARTH :

A POPULAR VIEW OF COUNTRIES, CLIMATES, AND SEASONS.

Also on the 1st of December,—THE SEA.


In One Volume 8vo., (350 pp.) price 16s. in cloth lettered,

THE

LONDON CATALOGUE OF BOOKS,

WITH THEIR SIZES, PRICES, AND PUBLISHERS ;

Containing the BOOKS published in London, and those altered in Size and Price, since the year 1814, to January, 1835.

 The Catalogue, containing upwards of 20,000 Works, is classed in the following order, viz. :—Miscellaneous Literature (including English School Books)—Divinity and Ecclesiastical History—Law and Jurisprudence—Medicine, Surgery, Physiology and Chemistry,—Hebrew, Arabic, Greek, Latin, &c. (including School Books).

"A Repertory most diligently and accurately compiled ; and consequently of great value to the buyers of Books. It is not only a guide for the present day, but the foundation for a standard in days to come."—*Literary Gazette*.

"A very authentic and complete work."—*Printing Machine*.

"We believe literary men are little aware that there exists for them so valuable and so desirable an auxiliary. Its advantages are too obvious to require comment."—*New Monthly Magazine*.

London: published by ROBERT BENT, (Literary Advertiser Office), Aldine Chambers, 13, Paternoster-row, and sold by all Booksellers.

CRITICAL NOTICES.

"The 13th No. of this various and pleasing provincial contemporary has assumed the Quarterly form: upon which we have only to repeat the same expressions of approbation which we applied to it in its more frequent shape of publication."—*Literary Gazette*.

"The present number contains a judicious collection of articles, literary and scientific, philosophical and critical. *The Analyst* ought, from the variety and the interest of its contents, to command an extensive circulation, a circulation which, we trust, it will obtain."—*Liverpool Albion*.

"A Quarterly Journal, in which subjects of practical science are handled in a highly popular and pleasing manner."—*Albion*.

"The late *Analyst Magazine*, the monthly miscellany of light and elegant entertainment, has taken advantage of success, and has now assumed the higher character of a Quarterly Journal. This, the first number issued from its new eminence, is full of promise. We have not space for entering minutely into the merits of its various able contributions and editorial articles, in which are evident the highest order of literary taste and talent. The "Remarks upon Bishop Burnett's History of his own Time" is the first, and may truly be called the *leading*, article. It is worthy of any one of our established *quarterlies*, and is of itself sufficient to shew that our very attractive midland periodical is supported and conducted by first-rate ability."—*Warwick Advertiser*.

"The present number cannot fail to raise the character of this useful publication."—*Wolverhampton Chronicle*.

"It gives us pleasure to find that this periodical has assumed the more important form of a Quarterly Journal, in which shape, we believe, it will not only be more acceptable than heretofore to its readers generally, but prove far more effective in the cause of science and literature. The contents of the present number are various, and almost all good. We may mention, in particular, the articles on Ornithological Nomenclature, and Burnett's History, as being admirable. The notice of the latter work is a fine and elegant critique, penned in the best spirit; in which Burnett is ably defended against his calumniators."—*Cheltenham Chronicle*.

"We invite attention to an article on the Comparison of the Climates of London and Malvern, and to the scientific remarks contained in this admirable Paper. *The Analyst*, although now in its teens, has attained the dignity of staid maturity, and bids fair to stand unrivalled as a Magazine of Literature, Science, Natural History, and the Fine Arts;—we therefore cordially recommend it to general perusal—to men of science and correct taste our recommendation is not requisite."—*Hereford Times*.

"With the change in the mode and period of publication, *The Analyst* has assumed a more definite, exalted, and important character; and henceforth must be considered as exclusively devoted to the higher purposes of Literature, Science, Natural History, and the Fine Arts:—such a work, in fact, as we have long felt to be a desideratum in the provinces. In the typical arrangements, the improvement is manifest; and we know of no periodical "got up"—we will not say in a superior—but even in so excellent a style; whilst of the contributions we need only observe that they are from the pens of several of the most distinguished writers of the present day;—in proof of which it may suffice to refer to the opening article of this very number—"Remarks upon Bishop Burnett's History of his own Time." Of the other Papers it is much to say that they are not unworthy of association with this masterly vindication of Burnett."—*Cheltenham Journal*.

"There is enough of lore and learning throughout its pages, without the abstruse speculation that bewilders, or the pedantry which offends: and it appears to us that the soberness of truth and usefulness, and the practicable demonstrations of science, are well commingled with the brilliant hues of fancy."—*Worcester Herald*.

"*The Analyst* need not fear taking its place by the side of any other periodical, be it metropolitan or rustic."—*Gloucester Chronicle*.

"This intelligent monthly periodical has been converted into a "Quarterly Journal of Science, Literature, Natural History, and the Fine Arts."—From the change of title it must not be inferred that the work is now calculated for scientific persons only. Though it has certainly higher claims to their attention, the contents are pleasingly varied, and present much to attract the general reader."—*Worcester Journal*.



